

Misunderstanding Mars
And Minerva:

The Canadian Army's Failure
To Define an Operational Doctrine

A Monograph

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Abstract

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Between 1993 and 1995, while serving as the secretary of the Canadian Land Force Doctrine and Tactics Board, the author participated extensively in the process of doctrinal change which eventually resulted in the publishing of new 'capstone' operational and tactical level doctrine manuals in 1996-1997. These manuals introduce 'manoeuvre warfare' as the official doctrine of the Army. Adoption of manoeuvre warfare came after years of sporadic debate over revision of the 1985 *Combat Systems Studies* - which focused exclusively upon a defensive scenario in central Europe. The end of the Cold War and the withdrawal of Canadian troops from Germany in 1993 made the operational context of the *Systems Studies* irrelevant, leading to a search for new doctrine. The theory of manoeuvre warfare emerged as an attractive alternative.

This monograph examines whether or not 'manoeuvre warfare' is an appropriate operational doctrine for the Canadian Army in 2000 and beyond. The research emphasized a counterintuitive approach, critically examining the theory of manoeuvre warfare by investigating its origins and evolution in western military thinking. Four categories of documentary evidence were utilized: contemporary doctrine publications (US, British and Canadian) allowed comparison of current definitions and roles of military doctrine; published works of modern military history helped to determine the historical role of doctrine in the preparation of armies for war and the legitimacy of manoeuvre warfare as a distinct style of war; the published works of prominent military theorists were used to substantiate the theoretical foundations of manoeuvre warfare and its role vis-à-vis operational art; and contemporary Canadian policy and doctrine publications were reviewed to establish how relevant manoeuvre warfare is to Canada's strategic goals and to current operational realities. An analysis of the role of doctrine in the Land Force Management Process was conducted, using 'general systems theory' to illustrate deficiencies. As well, the 'operational concept' of manoeuvre warfare was analyzed using the theory of 'operational art' to illustrate the shortcomings of our current doctrine.

There are two important conclusions presented as a result of the research. Firstly, manoeuvre warfare does not have the necessary theoretical foundation to allow it to become comprehensive doctrine, of use in all aspects Force Management, in war preparation, and in the conduct of operations. Its utility does not extend beyond its use as a conceptual model to help understand tactical-level combat in specific scenarios. This works against the achievement of a true 'systems approach' to Force Management. Secondly, manoeuvre warfare is not linked to any specific strategic aims, or to any Canadian Army operations currently planned or being executed. Therefore it lacks operational-level utility, and does not facilitate operational-level cognition. The theory of manoeuvre warfare is predicated upon understanding an attrition-manoeuve dichotomy that demands explicit acknowledgment of manoeuvre warfare as a superior style of fighting. Therefore, it fails to recognize operational art as the means to reconcile such dichotomies, and to achieve coherence in the full utilization of all combat functions throughout an entire theatre of war. As doctrine manoeuvre warfare is non-integrative and fixed at the tactical level. This could potentially diminish the ability of Canadian commanders to understand in full the complex phenomenon of war.

The monograph ends with the recommendation that the Canadian Army reformulate and re-write its capstone doctrine, basing new doctrine upon a clearly defined operational concept that is consistent with strategic imperatives and with current operational commitments. This re-write should not plagiarize foreign doctrine, but must reflect Canadian intellectual appreciation of operational art and a systems approach to preparation for conflict.

Table of Contents

| | |
|---|-----------|
| <u>Section I. Introduction</u> | 1 |
| Aim and Scope | 1 |
| The Definition of Military Doctrine | 3 |
| The Canadian Army and Operational-Level Doctrine | 5 |
| <u>Section II. Manoeuvre Warfare Adopted</u> | 8 |
| The Evolution of Manoeuvre Warfare Theory | 8 |
| Canadian Manoeuvre Warfare | 11 |
| <u>Section III. The Institutional Role of Doctrine</u> | 14 |
| Role of doctrine | 14 |
| Doctrine in History | 15 |
| The Systems Approach | 18 |
| The German Army 1923-1941 | 21 |
| The US Army 1976-1991 | 23 |
| <u>Section IV. Operational Art – Making Doctrine Relevant</u> | 26 |
| Manoeuvre Warfare and False History | 26 |
| The Emergence of Operational Art | 31 |
| Canada and Operational Art | 34 |
| <u>Section V. Conclusion – Canadian Strategy and Manoeuvre Warfare</u> | 36 |
| Linking Strategy, Operational Art and Doctrine | 36 |
| Where To Go With Manoeuvre Warfare | 41 |
| <u>End Notes</u> | 44 |
| <u>Bibliography</u> | 57 |

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Introduction

Ares, Ares [Mars], destroyer of men, reeking blood, stormer of ramparts, why not let these mortals fight it out for themselves?

Homer (*Iliad*, 5. 34)¹

Sing of the wooden horse...built with Athena's [Minerva] help, the cunning trap that good Odysseus brought one day to the heights of Troy.

Homer (*Odyssey*, 8. 552)²

Mankind uses dichotomy. Art and science, positive and negative, good and evil, yin and yang – understanding is enhanced by perceiving a polarized world wherein all things are identified in relation to these poles. This is true in war. Ancient man knew two gods of war. The first, Mars – patron god of Rome - was blind to cause or justice, and in constant lust of bloodshed. His style of fighting has been considered simple yet violent and powerful, seeking death and destruction.³ His nemesis was Minerva – founder of Athens, goddess of wisdom, war and the arts, - whose method in war included cunning and stratagem, and whose desires were moderated by reason and compassion. City states paid tribute to one or the other of these war gods. In a manner similar, modern armies often identify with one part of a martial dichotomy. In the nineteenth century, for example, interpretations of an offensive-defensive dichotomy led to a belief in the pre-eminence of the offense (the *offensive à l'outrance*). This narrow perspective, widely favoured in Europe in the decades preceding 1914, was held with such religious zeal that generals in good faith sacrificed many thousands upon its alter during World War One.⁴ Modern debates about the pre-eminence of manoeuvre warfare over attrition have a similar sinister aspect.

Aim and Scope

Since the mid 1970's there has been a tendency in English-speaking armies to describe warfare in terms of a dichotomy: attrition and manoeuvre. Canada's Army has officially proclaimed itself a 'manoeuvrist' army.⁵ The same has happened in the British, Australian, New Zealand armies and in the US Marine Corps. The 'doctrine' of manoeuvre warfare – Minerva's

child – has been adopted because of its promise of rapid decisive victory with minimal casualties accrued. Warfare by attrition – a progeny of Mars - is abhorred.

This monograph argues that the attrition-manoeuvre perspective is a false dichotomy, a misunderstanding of the nature of war that has produced doctrine as dangerously narrow as *offensive à l'outrance*. The argument is made incrementally; first questioning the utility of the dichotomy as a basis for 'comprehensive doctrine' in the context of the Canadian Army's Land Force Management Process (LFMP);⁶ then examining the limited tactical-level focus of manoeuvre warfare theory, its irrelevancy to current strategic situations, and how it impedes comprehension of operational art. The monograph contains five sections.

In Section II the origins of manoeuvre warfare theory are reviewed, from its genesis in the 1970s as an interpretation of World War Two German doctrine, to its articulation in current Canadian and allied doctrine.

Section III refutes the idea that an army can simply adopt manoeuvre warfare theory as doctrine. The traditional roles of doctrine – namely the conceptual, organizational, material, procedural and moral utility of doctrine - are examined. The conclusion is that effective doctrine must be comprehensive and influence all aspects of the preparation of an army for war: doctrine can not be merely a cognitive device used to instill a particular theoretical 'mindset' about war. Two examples of comprehensive doctrine are presented, illustrating by comparison to what extent 'manoeuvre warfare doctrine' fails to provide anything but an abstract conceptual component to the LFMP.

Section IV examines the lack of historical and theoretical substantiation for the attrition-manoeuvre dichotomy. The evolution of operational art is then introduced. The contention is made that there is no such thing as a panacea theory of war: doctrine must be aligned to war-planning based upon geo-strategic realities; only then can operational art be exercised. The relevancy of manoeuvre warfare as the stated operational doctrine of the Canadian Army is then examined in Section V.

Fundamental to the entire thesis is an appreciation of the operational level of war, of operational doctrine, and of operational art. The monograph proposes that operational level doctrine fulfills a synthesizing role that reconciles false dichotomies and eliminates the confusion caused by such dichotomies. The argument relies heavily upon 'general systems theory' as a basis for the formulation and application of effective doctrine within the context of Force Management, and as a key to a higher understanding of the complex phenomena of war. The final conclusion of this monograph is that the Canadian operational and tactical level doctrine manuals must be reformulated and rewritten to ensure coherency within the context of the strategic realities, and to enhance their utility within the LFMP. The rewriting must reflect Canadian operational thinking, accommodating interoperability, but not plagiarizing wholesale either British military doctrine or the words of US military theorists.⁷

The Definition of Military Doctrine

There is no common agreement between armies about the definition and role of doctrine. Dictionaries have long defined doctrine as "that which is taught."⁸ J.F.C. Fuller saw doctrine as the "central idea of an army".⁹ Current NATO thinking describes it as "fundamental principles by which the military forces guide their actions in support of objectives."¹⁰ The US Marine Corps (USMC) sees doctrine as the means to convey the Corps' beliefs about war – its nature, theory, and preparation for war and its conduct. USMC doctrine does not incorporate specific tactics, techniques or procedures for battles or operations; but provides instead a conceptual basis "for harmonious actions and mutual understanding."¹¹

The British divide doctrine into three levels – military, operational, and tactical. Military doctrine is derived from government policy and addresses the purpose for the retention of an army, the nature of wars it envisions fighting, and how it foresees winning such wars. The function of military doctrine is to "establish the framework of understanding of the approach to warfare in order to provide the foundation for its practical application."¹² Its purpose is to convey understanding not instruction. In contrast, operational doctrine applies to particular theatres and

has a purpose of both understanding and instruction. Tactical doctrine is what is taught and practiced.

The US definition of doctrine is less structured and of broader utility. The role of doctrine is to provide a statement about how the army will conduct war and operations other than war.¹³ Doctrine serves to facilitate communications between soldiers, and to underpin the curriculum of service schools. The tactics, techniques and procedures taught and practiced have as their common basis the overarching doctrine articulated in Field Manual (FM) 100-5 *Operations*. Beyond this, US Army doctrine is “a tool with which to coordinate the myriad activities and thinking of a complex organization...an expression of the concepts against which researchers test equipment, as well as a channel of communication with which to influence the activities and thinking of the field army.”¹⁴ Generals Frederick Franks and Gordon Sullivan saw it as “the engine of change”¹⁵ providing “...the intellectual structure for supporting doctrine, training, leader development and force structure decisions. It reflects the impact of strategy, technology, interservice relationships, political decisions and the capabilities the Army must possess....”¹⁶ The key distinction in the US definition is its explicit institutional role, far more than the conceptual role implied in European armies and in the USMC.

The Canadian definition of doctrine is a verbatim adoption of the British, approved by the British Army Board in 1993, accepted by the Canadian Army Doctrine and Tactics Board in 1994 and presented in Canadian Forces Publication (CFP) 300-1 *The Conduct of Land Operations*:

Military doctrine is a formal expression of military knowledge and thought, that an army accepts as being relevant at a given time, which covers the nature of conflict, the preparation of the army for conflict, and the method of engaging in conflict to achieve success.¹⁷

However, Canadian Army doctrine is distinguishable from British Army doctrine in structure and role. There is less of a clear distinction between ‘military, operational and tactical’ doctrines, and it is unclear in Canadian doctrine what exactly is descriptive and what is prescriptive. It differs significantly from US Army doctrine by its role. Canadian Army doctrine

is not an 'engine of change'. It is considered merely one of the many products of the LFMP. The LFMP is a linear development process designed to rationalize army activities. In the process, doctrine is one of many equal subordinate parts, and not the key component that binds all the parts together. Nor is Canadian doctrine tied directly to stated Canadian strategic imperatives. Much like USMC doctrine, it is considered a cognitive tool – used for conceptual understanding and not to regulate action. This monograph contends that, by not linking doctrine to strategic imperatives and to operational realities, Canadian Army doctrine is more easily influenced by interpretive theories, as it has been by 'manoeuvre warfare', which do not have obvious relevance to ongoing operations. Lacking clear strategic utility, Canadian Army doctrine fails to provide army leaders with cognition of an operational-level. In turn, lack of operational-level understanding prevents the full development of a systems approach within the LFMP, based upon comprehensive doctrine, and precludes understanding of operational art during Canadian Army operations.

The Canadian Army and Operational-Level Doctrine

Canada has very little experience with operational level doctrine and operational art.¹⁸ Canadian military strategic issues came under the umbrella of British Imperial policy until 1945, and subsequently under the strategic direction of NATO. While Canadian soldiers participated in both World Wars, and have been deployed on both NATO and United Nations missions since 1947, the Canadian Army has never held operational level responsibility for anything other than domestic campaigns. Canadian experience and expertise in conventional operations has been limited to the tactical level.

Lack of experience at the operational level, and lack of responsibility for whole campaigns, has precluded the need for distinctly Canadian doctrine for the conduct of conventional operations. Canadian Army doctrine has therefore always focused upon the conduct of battle at the tactical level. The tactical doctrine has been formulated and revised based upon British and American practices, and upon the Canadian experience of war in Europe and Korea.

During the Cold War a distinctly Canadian tactical doctrine was practiced – one centred upon the independent mechanized brigade group comprised of task organized all arms battle groups and combat teams who together could carry out a myriad of tactical functions. The brigade group was part of theoretical corps construct – Corps 86 – which gained context within the NATO strategic and operational framework. Corps 86 also guided force development by examining how to equip and fight a Canadian force in a defensive battle in central Europe.¹⁹ Therefore, from the strategic to the tactical level there was a coherency between doctrine, instruction and training throughout the Army's schools and units.

With the withdrawal of the Soviets from central Europe the framework disappeared and the context became moot. This, coupled with the withdrawal of forces from long-standing bases in Germany and a heavy peacekeeping commitment, created the need for a new framework for Canadian doctrine. This was provided by an emerging tactical theory of manoeuvre warfare that promised great things for little armies such as Canada's. Thanks mainly to British and American influences, the theory of manoeuvre warfare was officially adopted by the Canadian Army and conveyed in its key doctrine manuals.²⁰

The possible impact of manoeuvre warfare upon the army has yet to be realized, and depends very much upon the definition and role of doctrine within the LFMP. This monograph argues that its impact will be negative for two reasons. Firstly, because manoeuvre theory does not provide for comprehensive doctrine useful to the full range of activities within the LFMP; secondly - because it is not sound military theory - the tactical prescriptions of manoeuvre warfare lack relevance to the strategic realities of the Canadian military. The cumulative result will be a continued lack of coherence between army strategy and army tactics. The inadequacies of manoeuvre warfare as an operational level doctrine preclude it from achieving synthesis amongst all tactical activity in accordance with strategic demands. It fosters, rather than reconciles, the false dichotomy of attrition and manoeuvre; impeding comprehension of operational art in war. This is a fatal flaw. The promises of manoeuvre warfare support only

preparations for short, decisive wars. Canadian history demonstrates that equal consideration must be given to larger-scale mobilization for sustained warfare – which if not anticipated and planned will lead to terrible sacrifice. Manoeuvre warfare demands that Canadian soldiers pay homage to Minerva, while ignoring the pervasive and immortal Mars.

II. Manoeuvre Warfare Adopted

At the heart of warfare lies doctrine. It represents the central beliefs for waging war....Doctrine is of the mind, a network of faith and knowledge reinforced by experience which lays the pattern for the utilization of men, equipment, and tactics it is the building material for strategy. It is fundamental to sound judgment.

General Curtis E. LeMay²¹

The Evolution of Manoeuvre Warfare Theory

The current Canadian operational concept – manoeuvre warfare - is relatively new. It emerged during the American ‘doctrine reform debate’ of the period 1976-1989; a debate originating from General William E. Depuy’s revision of American Army doctrine for the 1976 edition of Field Manual 100-5 *Operations*.²² Severe criticism of Depuy’s ‘Active Defense’ resulted in healthy introspection and reappraisal of both US Army doctrine and the US Army doctrine development process. Researchers and writers outside of the US Army were amongst the strongest critics. First among these were civilian defense analysts William S. Lind and Edward Luttwak.

William S. Lind first presented his criticisms in an article in *Military Review* in 1977.²³ Lind was an Adviser to Senator Gary Hart and had considerable influence with that politician. His *Military Review* article was copied verbatim as Annex G to Senator Hart’s 1978 *White Paper on Defense*.²⁴ Maneuver warfare theory was born in this article. Lind characterized military doctrine as being of two possible types – attrition or manoeuvre. A doctrine of attrition seeks victory through “the physical reduction of the opposing forces”; while the “primary objective” of a doctrine of manoeuvre was “to break the spirit and will of the opposing high command by creating unexpected and unfavorable operational and strategic situations, not to kill enemy troops or destroy enemy equipment.”²⁵ In a manoeuvre doctrine, manoeuvre becomes an end in itself. This theory was substantiated almost exclusively from an interpretation of *blitzkrieg* as relayed through B.H. Liddell Hart and General Heinz Guiderian. “The Germans developed the maneuver

doctrine before and during World War II: the Soviets in many ways have adopted it.”²⁶ Lind’s interpretation contended that attrition warfare required technological or numerical superiority, while manoeuvre warfare did not. The two doctrines were mutually exclusive; therefore, it was only logical that US forces facing war against superior Soviet forces in Europe should use a manoeuvre doctrine. The 1976 edition of FM 100-5 *Operations* was criticized as decidedly attritionist, over-reliant upon the defense, upon firepower, and upon winning the so called ‘first battle’ of the next war by destroying enemy units incrementally.

Lind’s manoeuvre-attrition dichotomy was utilized in subsequent writings by Edward Luttwak.²⁷ Luttwak used the word ‘relational-maneuver’ to describe what he thought was a superior ‘style of war’: one which sought the ‘systematic disruption’ of the enemy’s military, and not their ‘cumulative destruction.’²⁸ Luttwak also used *blitzkrieg* as the exemplary model. He claimed that no doctrine could be purely attritionist or manoeuvrist – but would in character lean toward one or the other of these two theoretical extremes.

Lind’s and Luttwak’s ‘styles of war’ were presented as conceptual devices; theoretical conceptions to illustrate what they believed to be an incorrect focus and emphasis of the US doctrine of that time. Their explanations included examples of a few *wehrmacht* tactical procedures, but there was no analysis of what might be the comprehensive tactics of manoeuvre or attrition warfare, or what would be the material or organizational needs of each.

The ideas of both Lind and Luttwak had some influence in the doctrinal reviews leading up to the US Army’s Airland Battle. In 1981 these analysts were invited to review and discuss the drafts of a new FM 100-5. They were critical of the US Army’s unwillingness to officially adopt their theories, and continued to believe that the army was too attritionist in orientation.²⁹ In this criticism they were inextricably linked to the political agendas of the “Defense Reform Caucus.”³⁰ In response the Army considered manoeuvre warfare theory as much too simplistic.³¹ As appealing as the theory might be, it depended too heavily upon a seemingly irreconcilable

attrition-manoeuvre dichotomy that defied coalescence of the theory into coherent and comprehensive doctrine.

The US Army instead pursued deeper analysis of military history and theory. While the new doctrine of FM 100-5 in 1982 acknowledged the ‘manoeuvrist’ point of view, it also sought to reconcile the attrition-manoeuvre split focusing upon activities at the operational level of war.³² During the mid 1980s the German ‘*blitzkrieg* cult’ waned under the scrutiny of sound academic study, and the influence of Soviet theorists steadily grew.³³ With further refinement US Army doctrine was revised in the 1986 edition of FM 100-5 to articulate AirLand Battle in the context of ‘operational art’. Manoeuvre warfare as a theory gave way completely to the coherent and comprehensive doctrine of AirLand Battle.

The US Army left the attrition-manoeuvre doctrine debate when it instituted AirLand Battle. At this same time both the US Marine Corps and the British Army were just joining the debate, having discovered ‘manoeuvre theory’. William S. Lind became highly influential with Major General A.M. Gray – the future Commandant of the US Marine Corps. In 1985 Lind presented a more mature manoeuvre theory in the *Maneuver Warfare Handbook*.³⁴ The Marine Corps encapsulated his ideas into their own new doctrine, published in 1989 in the Fleet Marine Force Manual 1 (FMFM 1) *Warfighting*. The Corps believed that doctrine was first and foremost a conceptual tool, used to harmonize thinking. This allowed for an easy acceptance of manoeuvre warfare theory, which does not rely upon specified weapons or organizations. The theory retained psychological appeal in its emphasis upon speed, movement, decentralization of command, and economy of force. Yet – as a myriad of articles and dissertations attest – for ten years the Marine Corps has suffered internal tensions related to this attrition-manoeuvre dichotomy, finding resolution by deviating from Lind’s theory and adding structure to manoeuvre warfare. This has produced more substantive concepts to organize, equip and practice the Corps.³⁵ There has also been some tacit recognition that the doctrine of the Corps is tactically focused and not adequate to an appreciation of campaign planning and operational art.³⁶

In the British Army, interest in doctrine reform was sparked by a more genuine (a less politically-connected) military theorist – Brigadier Richard Simpkin.³⁷ Simpkin wrote and lectured extensively on ‘manoeuvre theory’. His operational ideas were articulated in *Race to the Swift*. Abiding with the attrition-manoeuvre dichotomy he incorporated Soviet concepts into his theory and illuminated the physical dynamics of warfare. This book, “marred by some complex prose”, was nonetheless chosen by the Chief of the General Staff, General J.L. Chapple, as a basis for a revision of British doctrine articulated in 1989 in *The British Military Doctrine*, and in subsequent Army Field Manuals.³⁸ The attrition-manoeuvre dichotomy was utilized in this doctrine as illustrative of the changes the doctrine promised. Manoeuvre warfare was seen as a way to break from a positional style of warfare epitomized in NATO’s western European defence. It was also seen as the means by which smaller armies could produce more decisive operational results. Debates still continue regarding the validity about manoeuvre over attrition as ‘styles of war’; and this in itself is an indication of unattained synthesis, if not doctrinal confusion.³⁹

Canadian Manoeuvre Warfare

While the US Army broke from the confusion of the attrition-manoeuvre debate in order to instruct and apply AirLand Battle, the Canadian Army was using its own ‘systems approach’ to define its tactical doctrine for a corps fight in central Europe – embodied in the Combat Systems Studies (CSS). This was formalized in the 1980s with the *Combat Systems Studies 1996-2005: The Corps Study Model*, under the auspices of the Land Force Combat Development Cycle. Using the scenario of a Canadian Corps deployed in a defensive mission in central Europe, the CSS outlined the envisioned threat, the integral functions of the corps, the organization of its components and their weapons systems. The operational concept for Canadian combat development was derived from this threat scenario. Canadian organization, equipment procurement and tactical doctrine were largely defined by this concept. The executive summary of the CSS was eventually produced in the *Canadian Land Forces Synopsis of Operational*

Concepts for the Period 1996-2005, published in July 1989, four months before the Berlin Wall came down.

After the Soviet withdrawal from central Europe the relevancy of the CSS faded. The re-deployment of Canadian forces from Germany back to Canada clearly marked the end of legitimacy of the underlying operational concepts presented in the CSS. But important components of the CSS remained within the Canadian combat development process, most noticeably a commitment to a catalogue of 'combat functions', a categorization of initially eleven functions (now reduced to six – command, information, manoeuvre, firepower, protection and sustainment), that helped to develop essential capabilities for the Canadian Army. While CSS was in effect, these functions were unified under a common doctrine derived from an alliance operational concept. Relevancy was obvious and common purpose – the unifying component of any system – was tangible. With the demise of the foundations of the CSS there began a search for a replacement operational concept. Manoeuvre warfare emerged as an alternative. Unlike CSS it is not based upon a real strategic imperative, but was considered to have universal application.

The army gradually accepted manoeuvre warfare as an operational concept. This was not a deliberate thing. The ideas of manoeuvre warfare were not chosen by the army's senior generals – as they had been in the US Marine Corps and in the British Army. The ideas entered into informal discussion through articles and papers circulated between 1988 and 1994.⁴⁰ In 1994 it was decided that a revision of army doctrine was necessary and would be conducted by a review of allied doctrine and a reformulation of existing Canadian doctrine in accordance with these allied works.⁴¹ The most influential written doctrines of the time were the British and the US Marine Corps' – not so much for their concepts as for their compelling eloquence.

The authors of the capstone manuals (CFP 300 *The Army*, and CFP 300-1 *The Conduct of Land Operations – Operational Level Doctrine for the Canadian Army*), deliberately did not use the words manoeuvre warfare, largely because of the confusion surrounding the term.⁴² They adopted instead Simpkin's words and concepts, well articulated in British doctrine manuals.

British manoeuvrist doctrine became the Canadian Army's – without clear identification of an operational concept beyond the continued Canadian commitment to NATO. The writing of subsequent tactical doctrine manuals deviated from CFP 300 and 300-1 by formally introducing the term 'manoeuvre warfare' and adopting William Lind's definition. Whilst well-intentioned, the use of Lind's construct of manoeuvre warfare only increased the confusion surrounding the term and detracted from an attempt at coherency between CFP 300-1 and CFP 300-2 *Land Force Tactical Doctrine*. The confusion is exacerbated in that there are no organizational, material, or procedural considerations in manoeuvre warfare, whether considered as an operational concept or as doctrine.⁴³ Like that of the US Marine Corps, Canadian doctrine has become a cognitive devise – 'a mindset'. Unlike the USMC, the Canadian Army has not sought to add structure to the conceptual model of manoeuvre warfare. Section III examines the problems related to this perspective, demonstrating to what degree manoeuvre warfare falls short of comprehensive doctrine, and emphasizing the need to revamp the 'systems approach' utilized formerly in the *Combat Systems Studies*, and needed in the LFMP, in order to overcome current Canadian doctrinal confusion.

III. The Institutional Role of Doctrine

The overarching operational concept of Canada's Army is manoeuvre warfare, well described in the keystone doctrine manual CFP 300-1.⁴⁴

Manoeuvre warfare is a mindset. There are no checklists or tactical manuals that offer a prescribed formula on how to employ manoeuvre warfare.⁴⁵

Role of Doctrine

The current Canadian manoeuvre warfare concept is too superficial to adequately serve the institutional role of doctrine. This section argues that the operational concept of an army must be more than a cognitive tool – a 'mind set' – as suggested in the above quote from Canada's capstone tactical doctrine manual. In order to have institutional utility the operational concept of an army must be clearly articulated as doctrine, so that it may serve the needs of all aspects of Force Management, and so that it ties together all subordinate doctrine – the tactics, techniques and procedures of an army with a strategic purpose.

The Canadian definition of doctrine - while mindful of its *cognitive* purpose - does not convey the traditional function of doctrine in standardizing and controlling the organizational, procedural, material or moral qualities of an army, particularly in response to technological and geo-strategic change. Doctrine must be holistic and integrated, incorporating all military activities that attempt to regulate and provide method to the formation, training and conduct of armies in operations.⁴⁶ Doctrine is the unifying force of a military. It is more than just principles of warfare: it also involves application, which includes method, structures, procedures and even rules. To view doctrine as "a mindset" is to perceive only its conceptual or cognitive quality: doctrine in its proper form must be much more comprehensive. It has *cognitive, procedural, organizational, material* and *moral* components. The *cognitive* elements are dedicated to the articulation of a particular concept of operations relevant to a specific time and which forms the basis for a common understanding of war. The cognitive elements include the army's attitude to the higher purposes of operations – their relationship with strategy and national policy – and also the army's

philosophy of command and control. The *procedural* elements of doctrine guide teaching and practice of the operational concept: this is often presented in field service regulations and includes tactics taught and applied. Doctrine also has an *organizational* component that ensures that army structures are commensurate with the operational approach. Also, doctrine has an element that is *material* that considers the proper equipping of an army to conduct operations in accordance with the operational concept (making the most of fielded technologies or driving experimentation in new technologies). Finally, doctrine has a *moral* (including the psychological) component that is concerned with how best to make soldiers fight, the ethical use of force, and army morale. The *moral* includes the leadership practices in the army. Doctrine then is multifaceted – *cognitive, procedural, organizational, material* and *moral*: the purpose of each facet is to provide standardization and a common high quality to an army. None of the components can stand alone as a complete basis for doctrine. The components must be to some degree integrated – binding them into a more coherent whole. It is the underlying point of this thesis that the best doctrines in history were those which were the most integrative of all of these factors. With this broad definition the relevance of doctrine in history is more easily understood.

Doctrine in History

That written doctrine forms a basis for commonality in all aspects of military activity is evident throughout military history. The writing of military doctrine parallels man's eternal search for "universal rules". Sun Tzu identified five factors of war that must be understood – the fifth of which were the laws governing military organization, regulations, command and logistics.⁴⁷ Vegetius' *De Re Militari* (late 4th century AD) attempted to promote a revival of former Roman strength by "offering a systematized remedy for alleged military failures in recruitment and training, army organization and strategy, and arms and equipment."⁴⁸ Vegetius also had a *moral* quality, advocating the renewal of traditional Roman discipline and replacement of barbarian soldiery with Roman citizen-soldiers.

Machiavelli's *The Art of War*⁴⁹ also attempted to restore Roman *organizational* practices by advocating militia citizen armies - instead of reliance upon *condottieri*. He sought *procedural* compliance to the military methods of *Pax Romana*, exhorting that control must be established over the growing means of waging war, and that war must be disciplined to political aims. As well, Machiavelli formulated a *moral* component to his doctrine: his *virtu* is as illustrative example of *moral* doctrine as one may find anywhere.⁵⁰

Raimondo Montecuccoli's works (1630-1680) attempted to divide martial studies into art and science, and from this point forward there were distinctions in the organizational, procedural, material and moral aspects of written doctrine.⁵¹

A contemporary, Maurice Prince of Orange-Nassau, organized a military academy for officers in 1619 – and therefrom began a standardization of drill and military method for most of Europe.⁵² This initiated a proliferation of military doctrinal treatise. The eighteenth century saw military professionalism rise in parallel with the formation of nation states and of national bureaucracies, the products of the Age of Reason, and a corresponding rise in doctrinal masterpieces.⁵³

Napoleon's victories came from adaptations of written doctrine, applied under his genius, but not encapsulated in any one defining text.⁵⁴ Both Jomini and Clausewitz interpreted Napoleon, examining cognitive, procedural and moral components of his 'system'. However, it is not until the second half of the nineteenth century that doctrine begins to take on a modern aspect. The intellectual and industrial revolutions, and the rise of enormous national armies produced great challenges in war planning, and warfare could no longer be understood or practiced from the narrow perspective of tactical procedure. Mass conscript armies, weapons industry, railroads, telegraph communications and the expansion of military staffs combined to allow for the rapid mobilization and 'distributed manoeuvre' of very large armies, over distances too vast for a single commander to exercise control.⁵⁵ This made necessary the introduction of a distinct echelon of command whose role filled the gap between military strategy and battle tactics: this became the

operational level. First advocated by Moltke as *operativ*, it eluded military cognition throughout most of the nineteenth and early twentieth centuries. The Soviets articulated it deliberately after world War One, the Germans incidentally.

The operational level demanded doctrine that retained relevance between strategic aims and tactical activity carried out over the vast distances both laterally and in depth. With the industrialization of warfare in the twentieth century, the conduct of distributed manoeuvre became increasingly difficult. Common doctrine helped to induce standardization of procedural, material, and organizational matters in the planning and conduct of such widely dispersed manoeuvre. Doctrine was also necessary to span the gap between the moral and cognitive realities of the strategic and tactical levels. When involved in distributed operations the difference in perspective between these two realities was profound. It became the task of modern doctrine to provide a unifying force in all areas – cognitive, material, organizational, procedural and moral – to reduce the dissonance between the strategic and tactical levels. This was particularly crucial after World War One when the potential impact of the industrial revolution, and the advent of advanced communications technologies, promised to expand operations over distances heretofore imperceptible. It was in this demanding era that truly comprehensive doctrine emerged.

The Systems Approach

In the twentieth century doctrine took on a comprehensive aspect. The size and complexity of armies and of military functions required standards of organization, supply, training, movement and standards of fighting that could not be satisfied by the simple prescriptions of Jomini. The factors and methods at work in society, particularly in industry, came to merge with military thinking to create complex doctrine. The Soviet and German armies of the inter-war period, and the US Army of the post Vietnam era reached epitomes in this regard. Examination of their doctrines of warfare reflects what has been called a 'systems approach' to the preparation for and conduct of war.

Perhaps the best theoretical analysis of the unifying force of modern doctrine is Shimon Naveh's *In Pursuit of Military Excellence*.⁵⁶ Naveh has convincingly argued that the most effective approach to military organization and function lies in the 'systems approach' derived from the 'General Systems Theory' of Ludwig von Bertalanffy and others.⁵⁷ Systems theory has widespread application and has been adopted by most complex western organizations as a basis for organization growth and management.

'Systems thinking' holds that modern technology and society are so complex that traditional methods of understanding and dealing with problems are now inadequate. New holistic - or systems - approaches, inter-disciplinary in nature, offer an alternative.⁵⁸ Borrowing from the lexicon of engineering and natural sciences, systems thinking defines the world in terms of feedback, equilibrium, control and stability mechanisms in dynamic social-economic systems. A 'system' is a collection of parts that interact with each other to function as a whole. Modern military systems contain multiple subsystems and numerous 'agents', and their interactions are highly complex.⁵⁹ Understanding these systems requires method that is the reverse of scientific reductionism. Instead of breaking things down to their smallest part for optimal development of one component of the whole, systems science seeks instead to recognize the critical systems and essential interactions between systems and subsystems, and to enhance these interactive processes to improve the system as a whole. It is a generalist, vice a specialist, approach. It recognizes that everything is connected to everything else, and that one can never solve a problem by doing just one thing, even 'one big thing'. This in essence is the underlying theory of combined arms operations, and of orchestration in joint and combined theatre operations. It is also critical to the Force Management processes. Integration of doctrine, acquisitions, organization, training, operations activities (and their inherent feedback mechanisms) is fundamental to war preparation and conduct. Doctrine in this environment must be much more than a 'mindset', it must have tangible 'outputs'.

The Canadian Army's 1980s Combat Systems Studies employed systems theory to ensure consistency in the Combat Development Process. While not new, the application of systems theory has not been constant. Naveh argues that the greater adherence to the underlying principles of systems theory has in the past led to military excellence, while lack of a coherent systems approach ensures friction and possibly defeat. This is particularly true at the operational level of war.

Strategy, whether political or military, requires a degree of creative vision and exists primarily in the field of the abstract. In contrast, tactics requires action and is mostly mechanistic and held to the requirements of the existing reality. According to Naveh, based upon his interpretation of Bertalanffy and Peter Senge,⁶⁰ there naturally exists a 'cognitive tension' or 'creative tension' between strategic abstraction and tactical mechanization: a dichotomy of perspective.

In order to harmonize this dichotomy and steer the system towards the achievement of its aims...modes of thinking must be utilized which are entirely different from those exercised in the traditional fields of tactics and strategy. Cognitive tension and a unique intellectual creativity, characteristic of commanders at the various echelons of operational systems, is a prerequisite which can only be acquired through a scientific process of training.⁶¹

Appreciating Naveh's strategic-tactical tension is fundamental to understanding the role of operational doctrine in reducing this tension:

[T]his dichotomy requires the preservation of a controlled disequilibrium between the general aim and the specific missions. Tactical missions should correspond to the general aim. Since these objectives are intangibly defined at the strategic level, and the mechanical performance is the domain of tactics, the acute importance of the operational level becomes clear. Only on this level can the abstract and mechanical extremes be fused into a functional formula, through the maintenance of cognitive tension.⁶²

The operational level is that level at which independent tactical systems and tactical commands are integrated under a common universal military system; a system that incorporates

an operational concept relevant to a nations military strategy.⁶³ The system draws together the myriad components that make up a modern army and - within existing cognitive tensions' - unifies these constituent parts, producing *constitutive* (synergetic) as opposed to *summative* effects. This is a process that works in times of peace, the LFMP for instance, and is a command function in war. In both instances it is the role of doctrine (based upon a relevant operational concept) that unifies separate parts under one common purpose. The parts of the military system involving force structuring and mobilization, research and acquisitions, training and training standards, and leadership and command practices – the *organizational*, the *material*, the *procedural* and *cognitive*, and the *moral* parts of an army – are brought to a synthesis at the operational level by conformity to a comprehensive operational doctrine.

While historically doctrines tended to emphasize one or two of the key components of doctrine over other components, the systems approach applied to modern military practices ensures that doctrine addresses the need to integrate all components. Operational doctrine must be a comprehensive binding force in the military system. It must be much more than a 'mindset', it must address all the potential material, organizational, procedural and moral tensions between the abstractions of strategy and the realization of strategic aims by mechanical actions at the tactical level.

History provides a number of good examples of the unifying force of a comprehensive doctrine: this monograph will use two examples to illustrate the relevance of such doctrine; that of the German Army 1923-1941, and the doctrine of the US Army 1982-1991. Both demonstrate the importance of a common military understanding - expressed in a comprehensive doctrine that is incorporated into a 'systems approach' - to the preparation and conduct of military operations. Examination of these doctrines will help to illustrate the weakness of 'manoeuvre warfare' as a basis for comprehensive doctrine within the Canadian LFMP, and the difficulty in producing from it a systems approach to Force Management.

The German Army 1923-1941

The successes of the *Wehrmacht* in Poland and France 1939-1940 have achieved mythical appreciation, largely because of over-attention given to *blitzkrieg* by B.H. Liddell Hart and General Heinz Guiderian.⁶⁴ The truth of these successes is less sensational and much more complex. The German victories were the result of better tactics, training, leadership and organization, bound together by a coherent operational concept and articulated in two editions of the capstone doctrine manuals – *Army Regulation 487: Leadership and Battle with Combined Arms-Part 1* (1921), *Part 2* (1923), and *Army Regulation 300: Troop Leadership (Truppenfuhrung)* (1933).⁶⁵ *Blitzkrieg* was not the operational concept of the German Army, and in fact was never articulated in German Army doctrine.⁶⁶ The real operational concept was a product of war planning against German's two nearest enemies, Poland and France. It called for the rapid defeat of each, sequentially, in battles designed to envelop and annihilate enemy tactical echelons.⁶⁷ This was called *kesselschlacht* – involving the trapping and destroying of opposing armies in grand battles of annihilation. The concept was in keeping with the German military tradition – inherited from von Moltke and von Schlieffen.⁶⁸ Throughout the pre-war period, and during the planning and execution of the 1939-40 campaigns, this operational concept was maintained. The *blitzkrieg* idea emerged out of the opportunities presented to key German generals during the execution of these campaigns. The flexibility inherent in German doctrine allowed such opportunities to be capitalized upon. The real strength of the *wehrmacht* did not rest in Guderian and his *panzer* concept, but in the extent to which a comprehensive yet adaptable doctrine was practiced throughout the entirety of German forces. *Army Regulations 487* and *300* were instrumental to German early tactical victories.

German Army Regulations provided the basis for a systems approach to German army Force Management, allowing for the integration of cognitive, organizational, material, procedural and moral elements.⁶⁹ The Versailles treaty severely constrained the material and organizational components of the army – until 1933. This was compensated for by von Seeckt's conscious

decision to enhance the cognitive, procedural and moral aspects of the force, creating the *Fuhrerheer* – a leader’s army - wherein all NCOs and officers were educated to a high standard of combined arms tactics and leadership initiative. The evolution of combined arms tactics began with a comprehensive assessment of the lessons of World War One that involved some five hundred German officers throughout the early 1920s.⁷⁰ The lessons were incorporated into doctrine in *Regulation 487*, which set down divisional organizations and tactical procedures that accommodated all arms groupings. It also identified the procedural and moral expectations of commanders, both junior and senior, in battle. *Regulation 487* became the guide for subsequent arms doctrine manuals, which became the standard texts of officer and NCO training.⁷¹

Within the organizational and procedural prescriptions of *Regulation 487* there was flexibility to experiment and grow as advances in technology and mechanization worked to enhance the all arms focus of the army.⁷² This gave impetus to the progressive evolution to tank doctrine in 1920s,⁷³ and helped to evolve motorized, armour and air force concepts. These were further refined in *Army Regulation 300 (Truppenfuhrung)*.

The publication of *Truppenfuhrung* in 1933 took the *Wehrmacht* a large step closer to achieving operational and tactical coherency. Part I focused on the cognitive enlightenment of ALL army commanders, corporal to general; it also gave detailed procedural and moral prescriptions. Part II listed organizations and movement data. The material needs of the army were implied in *Truppenfuhrung*, as German re-armament was only just starting at the time of publication. It is a testament to its utility as comprehensive doctrine that *Truppenfuhrung* did not change despite the massive expansion of the army 1933-1939, and the acquisition of completely new equipment and technologies. This illustrates the potential of a ‘doctrine-based’ army as opposed to a ‘capability-based’ army. The former is inherently more adaptive, and its reliance upon common cognitive, procedural and moral practices makes it all the more cohesive. *Truppenfuhrung* is the manual under which the Germans fought World War II. It, and not the opportunistic occurrences of *blitzkrieg*, was the key to German tactical success. In both the

strategic offence and the strategic defence the *wehrmacht* retained its fundamental cohesion, thanks largely to the standards demanded by the army's doctrine.⁷⁴ As unifying doctrine *Truppenführung* continues to be a model of coherent operational thinking resulting from an integrated systems approach.

The US Army 1976-1991

A second excellent model of comprehensive doctrine emerged out of US Army reforms 1976 to 1991. This incorporated the evolution of Airland Battle Doctrine under the US Army's Training and Doctrine Command (TRADOC). The driving force for change in doctrine came – as it had in Germany in the 1920s – from war planning, specifically from the realization under General Creighton Abrams that the NATO forces of 1975 could not win against a Soviet offensive. Influenced highly by the Arab-Israelis war of 1973, Abrams and General William Depuy set out to revise the Army's operational concept. Depuy formulated 'Active Defense',⁷⁵ which failed to instill commonality of thought, but succeeded in formalizing a systems approach to army development. The entire concept of TRADOC is a product of a 'systems approach'.⁷⁶ The capstone doctrine manual of the army, FM 100-5 *Operations*, became an instrument for TRADOC, providing the cognitive grounding for organizational, procedural, material and moral combat development throughout the army. It united the very complex and disparate organizations and units of the army under a common operational perspective, promoting coherence amid multiple functions and at the same time exacting relevant feedback for continued refinement of the operational concept and the main doctrine manuals. This was manifest in the re-publication of FM 100-5 in 1982 and its revision in the 1986 version.⁷⁷ These documents provided cognitive and moral direction for tactical commanders. They guided and integrated a new family of weapons systems,⁷⁸ affirmed organizational structures, and introduced new procedural concepts (most significantly 'Deep Battle') that deviated from previous concepts, and enhanced the armies thinking and practice of fire and manoeuvre. This doctrine was formulated and taught in a fully integrated systems structure. The operational concept set the focus for weapons acquisition and

training. The newly established National Training Center became the venue for systematically testing Airland Battle proficiency.⁷⁹ The Center for Army Lessons Learned captured critical observations during training and operations in order to provide a feedback mechanism in TRADOC's systems structure. Lessons learned were captured within revised tactical manuals. Critical lessons were considered in the continuing scrutiny of FM 100-5. This systematic approach to army development and management helped arrive at constitutive effects, producing compounding enhancements to army organization, procedures, weaponry and practices. All of these were captured under the comprehensive articulation of AirLand Battle, a war winning doctrine. There can be little dispute that Airland Battle was vindicated during DESERT STORM.⁸⁰ The quality performance of the US Army during that operation was largely facilitated by common understanding of the army's operational concept, articulated in the doctrine of FM 100-5.

Army Regulation 487, Truppenfuhrung and Airland Battle are illustrative of comprehensive doctrine. In their times, they fostered a systems approach to Force Development and Force Management. There was in each a distinctive cognitive, procedural, and moral component, which served to organize and equip forces to meet the tactical method prescribed. Each of these publications fostered subordinate doctrine used in teaching. Each produced requisite 'outputs' to allow other components of the army systems to function in an integrative manner. The doctrines were also important in the formation of army leadership, enhancing a common understanding of war that in turn provided uniform high standards in combat. All of these doctrines were so much more than a 'mindset'. The current British, USMC and Canadian perspective of doctrine, viewing it as serving a cognitive purpose only, will fail to achieve the synergistic effects of comprehensive doctrine. While Manoeuvre warfare may fulfill the conceptual element of doctrine, its want of organizational, material and procedural prescription, preclude it from contributing to a systems approach in Force Management. A second and equally problematic characteristic of manoeuvre warfare is its exclusive tactical-level focus. This is

examined in Section IV in order to illustrate how this tactical focus prohibits realization of operational-level competence and operational art.

IV. Operational Art - Making Doctrine Relevant

Military doctrine underpins national military strategy by rationalizing the development and use of military power on every level: tactical, operational, and strategic.

Douglas A. MacGregor⁸¹

It is essential that military doctrine address the inherent tension that exists between the strategic and tactical levels. This is best done through clear operational-level doctrine that is relevant to the strategic environment and accommodates the tactical realities confronting an army. This section examines the deficiencies of manoeuvre warfare in satisfying this linking function. In the first part of the section, the historical substantiation for manoeuvre warfare is analyzed in order to expose the soft theoretical foundations of the concept. Its exclusive tactical focus is also emphasized. The second half this section examines the evolution of operational art and Soviet manoeuvre theory, in order to illustrate the extent to which manoeuvre warfare fails in promoting an understanding of operational-level functions and operational art.

Manoeuvre Warfare and False History

“There is less here than meets the eye.”
Tallulah Bankhead⁸²

Advocates of manoeuvre warfare have continually used selective history to illustrate their ‘superior style of warfare’. Although many historical examples of manoeuvre warfare have been cited, the most frequently used is that of the German Army of 1939-1941. Lind, Luttwak and their supporters have argued that manoeuvre warfare was developed and practiced by the *wehrmacht*, and that the operational concept is applicable today. These are spurious contentions.⁸³

Manoeuvre warfare envisions winning by ‘systematic disruption’ through manoeuvre, producing defeat without the need for destruction. This is achieved by finding enemy weakness – his ‘gaps’ as opposed to his ‘surfaces’ – by a technique of ‘recon-pull’.⁸⁴ Once located these ‘gaps’ are to be vigorously attacked to produce twofold effect. Firstly, exploitation of a weakness will allow penetration into an enemy’s depth and cause the physical dislocation of his forces and

the disruption of his command and communication means. Secondly, by continuing to keep the initiative (with offensive action) the attacker operates faster than it is possible for the dislocated enemy to react to, causing paralysis in his command function. Defeat follows. All of this requires a decentralization of command and control so that the attacker can operate at high tempo and seize opportunities as they arrive.⁸⁵ This formula is the same in all types of war, at all levels of war, and in all environments of war. It has universal application – provided that military commanders are given the freedom to prosecute manoeuvre warfare without political restraints at the tactical level.⁸⁶ The German Army's performance in World War Two is always cited as the supreme example of manoeuvre warfare realized. However, historical analysis does not support this interpretation.⁸⁷

The aim of systematic disruption through manoeuvre was not German strategy of World War Two, nor was it the operational concept of the *wehrmacht*. German strategy recognized the duality of aims postulated by historian Hans Delbruck his monumental *History of Warfare*.⁸⁸ Delbruck, while interpreting how tactics have served to achieve strategic aims, raised a compelling theory that nations can have but two distinct forms of strategy – annihilation and exhaustion.⁸⁹ A strategy of annihilation is a 'single pole' strategy – seeking to annihilate the enemy's military forces in single decisive battle. This is the strategy of a superior force seeking unlimited aims (eg. the complete defeat of an opponent). The second form – exhaustion – is practiced by weaker powers whose aims are limited and who are unable to achieve victory through decisive tactical battle. Such nations follow a 'two pole' strategy of battle and manoeuvre to avoid battle, aiming to win their political goal by exhausting the enemy – either materially or morally – to the point where the conflict can be terminated on favourable or equal terms.⁹⁰ The second strategy is in no way inferior, may be of less risk and cost, but may also be much less decisive. Delbruck's paradigm has been used to understand military history in terms of national ways, means and ends: linking tactical ways and means with strategic ends.

The German Army of World War Two was following a strategy of annihilation, *Vernichtungsgedanke*, involving large-scale encirclement battles. German military tradition and her geo-strategic problem led German leaders to an unquestionable adherence to this strategy.⁹¹ Pre-war German operational research, war planning and doctrine were driven by empirical factors, chief of which was the need to guarantee national survival by defeating her two most threatening opponents - Poland and France.⁹² The mechanism for defeat was to be *kesselschlachten* – cauldron battles – that involved German envelopment of major portions of an enemy's fighting forces and their defeat by destruction and capture.⁹³

The emergence of the 'armoured school' after 1935 called into question the operational 'means' of the German strategy of annihilation. Guderian and other advocates attempted to deviate the focus of offensive manoeuvre away from the destruction of enemy field forces toward the severing of his lines of communication and the induction of 'paralysis' into his command system. The means to this end was to be a heavy concentration of armour forces, operating somewhat independently as they projected themselves into the depths of an enemy's territory. It is this formula that modern 'manoeuvrists' hold as the basis for manoeuvre warfare.

However, the 'armour idea' was not accepted in the *wehrmacht* as new doctrine. The traditional German tendency toward battles of annihilation, a lack of technological capacity for mechanization, and a predominantly infantry focus precluded adoption of the new concept.⁹⁴ German Army doctrine had accommodated the evolutionary development of armoured units, and understood the idea of deep armoured penetration, but remained committed to *kesselschlachten*, wherein armoured units would be tethered to infantry formations to support the detailed destruction of enveloped enemy forces.⁹⁵ The need to achieve penetration and to manoeuvre-in-depth was measured by the distances it would take to encircle the key Polish and French formations in a battle of envelopment and annihilation. The German strategy was thus still battle-focused, although operational level planning was required to effect the scope of the battle envisioned.

When German war plans were being put into effect *blitzkrieg* emerged as an adjunct to the stated operational concept of the *wehrmacht*. The procedural elements of penetration theory – *schwerpunkt, flachen und luckentaktik, aufrollen* - and the organizational makeup of offensive combat groupings, were already embedded in German envelopment doctrine.⁹⁶ They facilitated the initial tactical successes required in *blitzkrieg*, but thereafter they worked against the armour idea. German penetration theory was unintentionally wedded to the concept of *kesselschlachten* which prohibited bypassing enemy formations and furthering the penetration into the operational depth of the enemy. While the strategic aim of both *blitzkrieg* and *kesselschlacht* was ‘annihilation’ (rapid decisive victory), the tactical ways and means became divergent. This is crucial to recognizing the problem with modern manoeuvre theory. Manoeuvre warfare may be considered as a variation of this strategy of annihilation.⁹⁷ While it advocates deep penetration and annihilation by shock, it prescribes German tactical penetration techniques (eg. surface and gap tactics) that are historically contradictory to the manoeuvre in depth envisioned by Lind, or the manoeuvre in time envisioned by Boyd.⁹⁸

This opposition of purposes created enormous tension between command levels of the German Army in the 1939-1940 campaigns.⁹⁹ Yet, because of German military capacity to project reach to an operational-level depth, coupled with the use and exploitation of tactical expediences demanded by *Truppenführung*, the operations in Poland, western Europe, Scandinavia and the Balkans were successful. These successes were a result of the innovation allowed in the German military system – and not because of a coherent doctrine of *blitzkrieg* or manoeuvre warfare.

The tension between the institutional and doctrinal tradition of encirclement and the idea of strategic shock became fatal for the German Army in Operation BARBAROSSA and thereafter. In all offensive operations the *wehrmacht* remained a slave to its own stated doctrine,¹⁰⁰ and while attempting to seize certain opportunities to achieve *blitzkrieg*, the Germans failed to comprehend their own logistical limitations, and the significance of operational and strategic depth in Soviet military thinking. In the vast distances of Russia, against an enemy with

seemingly endless capacity to generate armies, the operational concept of the German Army, and the expediencies of *blitzkrieg* lost all relevance.¹⁰¹ With this loss also went the German capability to apply operational art.¹⁰²

There is no historical substantiation that manoeuvre warfare - based on German World War Two *blitzkrieg* - is a superior 'style of warfare', or that *blitzkrieg* doctrines have a universal operational application. Nor is there any truth to the argument that English-speaking armies have an exclusive tradition of the inferior attrition style of warfare.¹⁰³ Manoeuvre warfare as it was originally expressed rests upon soft theoretical foundations. While it has a strategic aim of 'annihilation' by shock, the ways and means to that aim are confused between German infiltration tactics and penetration theory, and *kesselschlacht*, all with a tactical focus of engaging and destroying an enemy in battle.¹⁰⁴ By dismissing the historical foundations of manoeuvre warfare its true nature is exposed: it is a formulation for the purposes of a debate, with a political agenda. Its utility was limited to aiding an understanding about the nature of manoeuvre in war at a time in the Cold war when Forward Defence was seen as perilous. It no longer serves a useful purpose. The utility of manoeuvre warfare theory has been superseded by a much more comprehensive and sound analysis of warfare which took hold in the US Army in the 1980s and reached a zenith with articulation of the concept of operational art in doctrine.

The Emergence of Operational Art

German doctrine in World War II had relevancy while the Germans conducted operations within the context of their envisioned pre-war strategy. Once they began operating outside of the envisioned strategy their focus upon battles of annihilation lost relevancy and they were drawn into a long war of exhaustion. In this their operational concept became moot. The limits of their empirical-based operational concept and doctrine, and the degree of strategic abstraction fomented from Hitler, precluded consistent application of operational art.

Likewise modern manoeuvre warfare theory (as articulated by the USMC, the British Army and by William Lind) has limited tactical level charm, but no clear relevancy to the

strategic environment that face modern forces. Manoeuvre warfare lacks operational level focus and application because it has no direct link to stated strategy and practiced tactics.¹⁰⁵ The operational level is the controlling component of the military instrument designated to carryout a particular operation. Control is exerted by the clear articulation of the operational concept and the operational objectives necessary to achieve strategic objectives in that theatre. The operational concept and objectives determine tactical plans. It is imperative that in preparing and executing plans that a consistency of purpose is preserved as a “conceptual denominator common to all numerous participators in the operational process...”¹⁰⁶ There must be a common aim between the separate tactical commands involved in an operation in order for the entire military endeavour to function in an effective coordinated manner, producing synergy and reducing the shocks of battlefield confusion and losses. Simply put, there must be operational art.

Operational art is the ability to conduct highly complimentary military activities, engagements and battles, simultaneously and sequentially across the entire width and depth of an area of operations to achieve common strategic purpose.¹⁰⁷ The art involves envisioning the constitutive effects of multiple engagements and battles - the mechanical realities of the tactical level - toward the achievement of a strategic abstraction.¹⁰⁸

Operational art was first formulated in the 1920s in the brilliant works of Aleksandr A. Svechin.¹⁰⁹ Svechin saw it as the means by which commanders orchestrated tactical action over vast distances toward the achievement of a common theatre-strategic purpose. His concept was framed within the prevalent strategic paradigm of the period, the Delbrukian dualism of strategies of annihilation versus strategies of exhaustion.¹¹⁰

Svechin believed that geo-strategic realities (characteristics of national geography, demography, industrial and military potential) dictated which strategy – annihilation or exhaustion – was appropriate for a state at any given time. In the wake of the destruction of World War One, Svechin felt that industrialized warfare precluded a Soviet adoption of the strategy of annihilation. The era when decisive battle could be used as a singular means to

achieve strategic decision was over. Instead, he advocated a strategy of exhaustion based upon preparations for war that achieved national military, geographic and industrial 'depth'.¹¹¹

General V.K. Triandafillov refined Svechin's work and formulated material, organizational and procedural constituents of Operational Art. His *The Nature of the Operations of Modern Armies* (1929) advocated the creation of a mass mechanized army supported by a developed industrial economy.¹¹² He introduced the concept of the 'shock army' as the instrument to achieve penetration (hopefully two penetrations in a theatre) to a critical depth to the enemy (through the enemy's tactical defensive zone – a 'break in' battle to a depth of 30-36 km).¹¹³ This would be followed an intermediate operation to pursue and destroy enemy to a depth of 150-200 km, followed by final operations to defeat remaining enemy at depth of another 30-50 km. Shock armies (and their subordinate units) were all-arms organizations. Triandafillov foresaw no major decisive operation, but the need for successive operations leading over time to strategic victory.

Svechin and Triandafillov chose operational concepts within a strategy of exhaustion as the best military policy of the USSR. In this they were opposed by General M.N. Tukhachevsky.¹¹⁴ Tukhachevsky was influenced by Fuller's ideas of mechanized and air force manoeuvres, annihilating an enemy by achieving faster mobility than he can sustain. Tukhachevsky borrowed from Triandafillov, envisioning the use of shock armies in penetration, but working in conjunction with massive airborne and air mechanized forces that would be inserted into the enemy's rear to create a complete dislocation of his defences to an operational depth. This 'Deep Battle' was to be decisive, producing rapid annihilation of the enemy by shock rather than destruction. It precluded the need for successive operations necessary in a strategy of exhaustion; albeit, Deep Battle was not to be a single decisive battle so much as a single decisive 'operation' involving manoeuvre and many deep battles with considerable extension in space and requiring great application of operational art. If anything in history approach's the manoeuvre warfare ideal of defeat by inducing shock it is Tukhachevsky's Deep Battle, and not *blitzkrieg*.

The great exhaustion versus annihilation debate in the Soviet Union lasted into the 1930s. During the debate a systematic approach to war-preparation evolved; one that connected political, military, economic and industrial productions, and geography and infrastructure considerations into a coherent formulation supported by a 'unified' military doctrine.¹¹⁵ Cognition of operational art was essential to this evolution. It allowed for a synthesis of tactical functions which reconciled the offensive-defensive, manoeuvre-position dichotomies prevalent in other countries at that time. Tukhachevsky and Triandafilliov both viewed destruction by fire and manoeuvre as equally critical. The physical extension of military forces throughout the breadth and depth of the area of operations meant that battles of attrition and deep manoeuvre were together very important, and not opposite poles in warfare. Operational planning in the Soviet Union sought to achieve integrated operations throughout an entire theatre of war, by providing all military activity a unifying purpose. Soviet doctrine attempted to retain relevancy to the geo-strategic situation and to link the abstract strategic aims of the country to tactical-level war preparations. As Svechin stated:

... like the tactician and operations specialist, a strategist is not completely independent in his field. Just as tactics is an extension of operational art and operational art is an extension of strategy, strategy is an extension of politics.¹¹⁶

Progress was made in Soviet army development even during the bitter strategic debates. Stalin eventually sided with Tukhachevsky in this dispute. Subsequently, he found reason to question Tukhachevsky's loyalty and had the general executed in 1937.¹¹⁷ After this the military preparations continued, but were diffused. The Soviet Army entered World War II hamstrung by 'the purges' and its effects upon the war preparations process.

While modern manoeuvre theory is not substantiated by *blitzkrieg*, it could be well-substantiated in Tukachevsky's Deep Battle. In fact, Richard Simpkin implies this.¹¹⁸ Tukachevsky's Deep Battle has the same aim as modern manoeuvre warfare, the rapid and decisive defeat of the enemy by paralyzing his command and control ability. However,

Tukachevsky's Deep Battle is not a model for small professional forces. Tukachevsky's prescriptions require massive political will, industrial focus, economic backing and formations large enough to induce shock by simultaneous military action over huge distances. Deep Battle is not the operational concept of small armies. Tukachevsky illustrated this point as follows:

Let's imagine a war between Great Britain and the USA, a war, for example, which breaks out along the Canadian border. Both armies are mechanized, but the English have, let's say Fuller's cadres of 18 divisions, and the US Army has 180 divisions. The first has 5,000 tanks and 3,000 aircraft, but the second has 50,000 tanks and 30,000 planes. The small English army would be simply crushed. Is it not already clear that talk about small, but mobile, mechanized armies in major wars is a cock-and-bull story. Only frivolous people can take them seriously.¹¹⁹

While the pre-war Soviets had broken from the binding constraints of a tactical level focus, most western Europeans, in contrast, had not. The British and French continued to analyze the problems of tactical stalemate of World War One. In England Fuller and Liddell Hart attempted to influence British military thinking toward a better understanding of industrialized warfare. However, the overstated simplifications of Liddell Hart,¹²⁰ the inability of Fuller to comprehend operational level mass and depth, coupled with the anti-intellectualism of the British Army,¹²¹ kept their ideas from achieving coherency and from gaining professional currency in England. In France the tactical focus of doctrine and the Gallic penchant for cartesian logic precluded any appreciation for the potential use of mass mechanized forces in operations of free manoeuvre. Both armies developed operational concepts and tactical doctrines which failed to appreciate the operational level distances and depth that the industrialization and mechanization of war allowed. Both suffered under the illusion that smaller professional armies and large reserve forces could match strategic imperatives.

Canada and Operational Art

Both the US and British Armies have formulated doctrine that uses German and Soviet theory. The difference between the two is that the British doctrine rests upon recognition of the attrition-manoeuve dichotomy created by theorists in the 1970s, and the American doctrine does

not. The British Army, and consequently the Canadian Army, chose from this dichotomy a manoeuvre warfare focus, because it promised to be the means by which a small army could achieve victory in grand decisive manoeuvre (spatial or temporal), at low cost. That such a concept has spurious historical substantiation has seemed to escape British and Canadian criticism. Particularly of concern is the selective use of theory and history to prove that small industrial age armies can achieve victory by shock action – without destruction, when history more correctly demonstrates that such victory usually can only occur when there is significant overmatch in size or technology.

That manoeuvre warfare has limited relevance to current British and Canadian geo-strategic realities, despite its promise of universal application, has likewise escaped notice or criticism. What is perhaps most frightful is that the adoption of manoeuvre warfare precludes understanding of operational art, because the nature of the dichotomy runs counter to the integrative function of operational art. This could potentially make Canadian Army tactical developments largely irrelevant to Canadian strategic needs. The next section of this monograph examines the applicability of manoeuvre warfare to the Canadian Army's strategic imperatives, to prove concretely that it lacks relevance and its curtailment of proper Canadian Army force development.

V. Conclusion - Canadian Strategy and Manoeuvre Warfare

The war-fighting doctrine developed in the Canadian corps during First and second world Wars formed the basis, the doctrinal principles, of what we are today. This basis is being eroded by a misinterpretation of foreign doctrines and a disquieting readiness to believe that others may be more professionally creative than we are.

Roman Jarymowycz¹²²

Linking Strategy, Operational Art and Doctrine

Canadian Army doctrine is now predicated upon an understanding of an attrition-manoeuvre dichotomy that leads to explicit acknowledgment of manoeuvre warfare as a superior style of war. This understanding is independent of any strategic demands or operational realities. The doctrine is not derived from an overarching operational concept that focuses planning to achieve specific strategic aims. Therefore the linkage between strategy and doctrine is tenuous. Furthermore, because manoeuvre warfare doctrine is regarded merely as a conceptual tool, and does not serve as comprehensive doctrine for Force Management, the linkage between it and other components of the LFDP are also tenuous. Manoeuvre warfare can not be used for doctrine-based force development or doctrine-based operations planning. Its utility to the Canadian Army is limited.

The armies studied in Sections III and IV were 'doctrine-based': in peacetime they used written doctrine as a link between strategic vision, a coherent operational concept, and tactical combat development, and in war as a link between strategic war plans and tactical actions. The Canadian Army in contrast is 'capabilities-based'.¹²³ Its organization and equipment reflects the stated requirement for the maintenance of a small multi-purpose and combat capable force. The multi-purpose capability rests within six Combat Functions (command, information, manoeuvre, firepower, sustainment, and protection), extant within certain army units that can be task-organized any number of ways to suit the requirements of a specific mission. These are tactical level functions, the assumption being that function of echelons higher than brigade will be fulfilled by allied armies (namely British, US, or within a multinational Division structure).¹²⁴

The Canadian Army is capabilities-based because Canada's strategy for the use of the military as an instrument of national power is not derived from war plans. It does not aim to prepare for either a war of annihilation, or a war of exhaustion, against any particular foe. Instead Canada's military strategy recognizes fiscal restraints and envisions the development of a multi-purpose limited in size and equipage by these restraints. The Canadian government wants battalion and brigade-sized forces of an expeditionary-type, capable of participation in joint and combined operations in accordance with the assigned missions of the Army. These missions are multifarious in nature and include: 'Homeland Defence', 'Defending North America', and 'Contributing to International Security'.

Formulating a single operational concept and doctrine that adequately links strategic imperatives to tactical realities in all three of these mission areas is problematic. Manoeuvre warfare certainly does not achieve such linkage. The prescriptions in CFP 300-1 and CFP 300-2 regarding manoeuvre warfare are highly abstract and have limited application in preparing the Army for any specific operations within the three mission areas. The stated purpose of manoeuvre warfare is to defeat an enemy by shattering his moral and physical cohesion rather than by destroying him by incremental attrition. Its method involves attacking an enemy's critical weakness so that he can not react to changing situations, therefore inducing paralysis of his systems and a loss of cohesion in his actions. How exactly a Canadian brigade is to achieve this operational concept is not articulated in either doctrine manual. There is no statement of organizations, equipment requirements, tactics, techniques or procedures to guide the accomplishment of manoeuvre warfare goals. Some techniques have been espoused in non-doctrinal writings about manoeuvre warfare, but they are rather shallow in focus and limited in application.¹²⁵

The Army's commitment to a capability-based approach reflects the fiscal, material and political restraints placed upon it. The capabilities that the Army can afford determine the operational commitments it can make and its approach to conducting these operations. The

prescriptions of manoeuvre warfare are largely irrelevant. The Army's size precludes – in all but the smallest domestic operation – the concentration of sufficient combat power to achieve the overmatch necessary to cause dislocation, disruption or pre-emption of an enemy demanded in manoeuvre theory.¹²⁶ Furthermore, the ability to operate with faster decision-action cycles has virtually no application in peacekeeping operations wherein decision is not reached by inducing rapid paralysis of opposing forces; and where information operations and civil affairs have difficulty achieving the overmatch necessary to 'out-loop' the indigenous forces. These operations necessarily follow strategies of exhaustion, with long-term presence gradually inducing change. Likewise the application of faster decision-action cycling in a conventional war loses its relevance if the Canadian brigade operates as part of a coalition division. It is this higher formation that determines the tempo of operations, and it is formations higher than this that formulate the operational framework for the warfighting force. To suggest that a Canadian Brigade will have flexibility to attempt a decisive manoeuvre, or will establish a decisive tempo, in accordance with Canadian operational doctrine, is rather farfetched, and certainly has limited and not universal application.

During peace, manoeuvre warfare should theoretically provide the integrative operational concept for the independent development of each combat function within the LFMP – to the best extent possible given budgetary and political constraints. Manoeuvre warfare is supposed to replace empirically based operational concepts or war plans, and provide a relevant conceptual framework for tactical-level development of 'capabilities for each of these core combat functions. The extent to which it fulfills these functions is inhibited by its decidedly tactical-level focus, and its lack of direct linkage to the assigned missions of the Army. Therefore it all but fails to provide the basis for comprehensive doctrine within the LFMP, and more tragically, it fails to provide cognition of an operational level of warfare, and operational art. While it is difficult to see any deficiency in operational art during current low-level tactical deployments, the Canadian problem of operational-level understanding is manifest in the lack of a 'systems approach' to Force

Management, comparable to that provided by *truppenfuhrung*, Airland Battle, or even the Combat Systems Studies, and in the absence of thinking and planning for large-scale wars.

The strategic vision of the army demands a multi-purpose force and the LFMP helps determine the separate capabilities of each of the combat functions in this force. However, there is no effective operational doctrine serving to link the strategic vision to the developments in the six combat functions. Coherence between ends and means is not achieved. While the LFMP attempts a systems approach to army development, it lacks the integrative glue of comprehensive operational doctrine to provide common purpose and focus to each component of the process. Combat function development is therefore subject to the diffusing influence of independent explorations of emerging technologies, of trendy concepts that are not tied to an operational doctrine, and of political agendas.¹²⁷ At the same time the lack of clear linkage between strategy, operations, doctrine and other components of the LFMP has made it difficult to develop tactical-level doctrine and measurable training standards. This in turn makes any lessons-learned process more difficult, which then makes a doctrine revision process harder. The systems approach, so well designed in the example of TRADOC, is not achieved by the LFMP. Canadian doctrine does not stem from a coherent operational concept, and the role of doctrine itself is restricted – it is not the ‘engine of change’ seen in TRADOC. It is not the key filter through which new ideas and concepts are screened, and through which feedback information is processed. Nor is doctrine within the LFMP the standard by which all other force development activities are measured. This failing of doctrine is in part because manoeuvre warfare is merely a ‘mindset’ and not comprehensive.

Doctrine can not just be conceptual. The effective formulation, teaching and execution of doctrine requires a systems approach designed to integrate in non-linear manner the cognitive, material, organizational procedural and moral components of an army into a coherent whole. While the gap grows between the tactical action, confined in time and space, and strategic need, ever extending in time and space, so too does the potential for cognitive tension between these

two realities. Military doctrine must address this gap. To be effective in the extremely complex structures of modern armies, and in very complex environments, the doctrine must have coherency, derived from analysis of the strategic imperative and articulating of the best ways and means to achieve strategic ends. Manoeuvre warfare can not fulfill this function.

Where To Go With Manoeuvre Warfare

Canadian operational and tactical level doctrines should be re-formulated and re-written to achieve coherency with current and forecast Canadian military strategy. This new doctrine should then form the basis for the comprehensive application of doctrine in the LFMP. Doctrine re-formulation should dismiss the attrition-manoeuve dichotomy and the theory of manoeuvre warfare, replacing them with general theory of warfare based upon providing Canadian Army leaders with a cognitive understanding of classical strategic thinking, an understanding of operational art, and knowledge about how these things relate to future Canadian tactical actions in coalition warfare, in peacekeeping, in independent domestic operations, and in the event of larger- scale conflicts requiring national mobilization. This will not be an easy formulation, for it requires that Canadian military thinkers start fresh, using counterintuitive processes and critical observation to determine the relevancy of all theories of war, and to restrict the powerful influences of foreign writers and trendy theories.

Any rewriting of Canadian doctrine must articulate the Army's operational-level concept. This concept must address Canadian realities. It should accommodate current missions and structures, but also anticipate future requirements, including larger-scale mobilizations involving all the elements of national power for sustained warfare. This would set the framework for a higher cognition of a distinctly Canadian operational-level. The operational level doctrine should explain the application of operational art in Canadian domestic operations. It should also educate the officer corps in classical military theories (annihilation and exhaustion strategies) and how these are manifest in US and British strategic thinking, without advocating the complete adoption of one or another. It should establish a tactical framework for force development that satisfies

inter-operability but maintains relevancy to Canadian realities and potentials. This framework should reconcile the attrition-manoeuvre dichotomy, and promote balanced force development based upon the traditional Canadian all-arms teams in both war and operations other than war. It should also frame how the army will expand through mobilization to fight the war of exhaustion that few today want to contemplate, but that history tells us we can not ignore.

It might well be true that the Canadian Army does not need an independent operational concept for large-scale war fighting, since it will in such instances always act in coalition with the US or British Armies. Yet, as was demonstrated under Corps 86, such a doctrine (when comprehensive) does facilitate operational-level thinking and understanding. At the very least, the Canadian Army officer should be educated in the distinctly different operational concepts of the British and US armies so that tactical formations can be employed in either system with minimal disruption. It is most important to understand that the US Army does not subscribe to manoeuvre warfare. Its operational doctrine does not preclude 'manoeuvrist' actions (eg. Deep Battle), but it does not subscribe to a simplistic manoeuvre-attrition dichotomy. Operational level doctrine in the US Army reconciles such dichotomies, leaving scope for operational planning that seeks to produce simultaneous effects by a myriad of means – including manoeuvre and fire – across the entire depth of an operational area. Advocacy of 'Network centric warfare' or 'maneuver dominance' through the 'Interim Brigade concept' has not unbalanced the US Army's commitment to operational balance. The US Army's doctrine remains comprehensive and embraces the operational level. It comprises an understanding of depth that is missing from British, Australian and Canadian doctrines – all based upon the shallow tactical industrial age construct of "manoeuvre warfare". The need for interoperability with the US Army makes it essential that Canadian officers understand US Army operational level thinking. Coherence with the Interim Brigade Combat Team initiative – with its full spectrum capability – should be mandated. At the same time Canadian doctrine should recognize the persistence of manoeuvre

theory in the British Army, its strengths and weaknesses, so that Canadian units might serve under British operational control without problem.

The Canadian officer's understanding of military strategy must also be broad. While it is beyond the means of the Canadian Army to independently practice annihilation it is very likely that a Canadian formation will play a limited tactical part in an annihilation operation under US or British direction. Canadians must understand the implications of this. Consideration by Canadian Army leadership about the army's potential role in both of the US Major Theatre War scenarios must be achieved. In such scenarios, the tempo and manoeuvre of a Canadian expeditionary brigade would be determined by higher formations, and not left to the notions of manoeuvre warfare in the minds of Canadian commanders. Conversely, the army would be negligent if it did not consider the implications of a failure in allied strategy to achieve quick victory – falling back upon a strategy of exhaustion, and the need for something other than a 'manoeuvrist approach'.

The Canadian officer should also understand the operational and strategic concepts relevant to operations other than war. While strategies of annihilation dominate US military thinking, the reality of Bosnia and Kosovo suggest that these are very much operations of exhaustion defying quick and decisive action. As such the military implication is clear – Canadian participation requires organizational depth in order to conduct long term rotations with minimal degradation of combat skills. Combat development that attempts to achieve sufficient organizational depth and training standards must be based upon a sound knowledge of the exigencies of limited versus unlimited warfare.

Written doctrine is of fundamental importance to the well being of an army, and to the application of a systems approach to army Force Management. A new written doctrine for the Canadian Army should come from Canadian pens. It should be clearly relevant to Canadian realities, serve as the basis for professional education about operational art. It should recognize the tactical methods of allies, and provide a framework for comprehending Canadian tactics and

procedures in operations of war, both small and large scale, and in operations other than war. Finally, it should be of utility to all component parts of the LFMP, providing key input to the LFMP system regarding force structure, equipment, training and subordinate doctrine, and capturing feedback from that system. If the Canadian Army can not institute Canadian operational doctrine relevant to both strategic imperatives and the tactical actions occurring now, then the army will never achieve proficiency in operational art, and the systems approach will be denied. Presently, the Canadian Army is trapped by the attrition-manoeuvre dichotomy, worshipping Minerva and ignoring the harsh reality of Mars, in a manner no different from the former worship of *offensive à l'outrance*.¹²⁸ Only hard work will allow the Army to ascend out of this trap toward embracement of an integrative operational level cognition, hopefully before Mars makes us aware once more of his power and wrath.

End Notes

¹ Homer, The Iliad trans. by Robert Fagles (New York: Penguin Books, 1990), Book 5, 34. Mars is the Roman name for the Greek god Ares – god of war.

² _____, The Odyssey trans. by Robert Fagles (New York: Penguin Books, 1996), Book 8, 552. Minerva is the Roman name for the Greek goddess Athena – goddess of war. Fagles' translations are in modern verse making Homer accessible to those untrained in the classics. His works are clear and compelling. The introductions by Bernard Knox are alone worth the price of the books. Both Fagles and Knox claim that the finest translation of the Iliad is Alexander Pope's whose prose is unequalled.

³ This is discernible in the *Iliad*, but modern interpretations are more condemning in their simplicity; a recent example is in John Arquilla and David Ronfeldt, eds. In Athena's Camp: Preparing for Conflict in the Information Age (Santa Monica: RAND, 1997), 8.

⁴ For a good discussion on this issue see John A. English, Marching Through Chaos: The Descent of Armies in Theory and Practice (Westport: Praeger, 1998), 81-82. For original sources see Ardent du Picq, Battle Studies trans. by Col J.N. Greely and Maj. R.C. Cotton (Harrisburg: Military Service Publishing Co., 1947), 118-127. For commentary on First World War generalship see J.F.C. Fuller, Generalship: Its Diseases and Their Cure (Harrisburg: Military Service Publishing Co., 1936).

⁵ For definition of 'manoeuvre warfare' and 'manoeuvrist' see Canadian Forces Publication (CFP) 300-2, Land Force Volume 2 – *Land Force Tactical Doctrine*, 1-7; and, the entire volume of The Army Lessons Learned Centre, *Despatches*, Vol 5. No. 1. The Canadian commitment to the 'manoeuvrist' approach is blessed in the *Land Force Strategic Direction and Guidance*, 1-2-8.

⁶ The Land Force Management Process is the Canadian Army's integrated system for the development of army concepts, doctrine, equipment needs, and training methods. It is akin to traditional Combat Development functions of the 1980s used in both the US and Canadian armies.

⁷ The entirety of paragraph 17, pages 1-9 to 1-11 of CFP 300-2 *Land Force Tactical Doctrine* is borrowed from William S. Lind's Maneuver Warfare Handbook (Boulder: Westview Press, 1985). Significant sections of CFP 300-1 Land Force Volume 1 – *Conduct of Land Operations – Operational Level Doctrine for the Canadian Army* (Ottawa: National Defence Publication, 1996) have been lifted word for word from both the US Army FM 100-5 *Operations* (1993) and the British Army Doctrine Publication Volume One – *Operations*. The author can say this with absolute certainty as one of the primary authors of CFP 300-1.

⁸ The Pocket Oxford Dictionary of Current English, Seventh Edition, ed. by R.E. Allen (Oxford: Clarendon Press, 1984); and, Nuttall's Standard Dictionary of the English Language, ed. by W.J. Gordon (London, Willaim Clowes & Sons, Limited, 1910). See also, *Design for Military Operations - The British Military Doctrine* (BMD) (Army Code 71451, 1989), 3.

⁹ J.F.C. Fuller, The Foundations of the Science of War (Leavenworth: Reprint by USACGSC Press, 1993), 254.

¹⁰ BMD, 3.

¹¹ Marine Corps Doctrine Publication 1 (MCDP 1) *Warfighting* (Washington, Department of the Navy, 1997), 56.

¹² BMD, 3-4.

¹³ United States Army Field Manual (FM) 100-5 *Operations* (Washington, Department of the Army, 1993), 1-1.

¹⁴ Edward Elmer Blankenhagen, Organizational Learning in the Development of Doctrine in the U.S. 1976-1986, (Ann Arbor: UMI Dissertation Services, 1995), 74.

¹⁵ Gordon R. Sullivan & Michale V. Harper, Hope is Not a Plan (New York: Random House, 1996), 10.

¹⁶ US Army publication, *TRADOC: Where Tomorrow's Victories Begin* (Fort Monroe: US Army Training and Doctrine Command Publication, 1993), 5.

¹⁷ Canadian Forces Publication (CFP) 300-1, *The Conduct of Land Operations - Operational Level Doctrine for the Canadian Army*, (Ottawa: Canadian Forces Publication, 1996), iii.

¹⁸ This statement must be qualified to some extent because the term "operational level" has become well worn but rather nebulous. The most compelling definition of operational level and operational art are found in James J. Schneider's "Theoretical implications of Operational Art" in On Operational Art ed. by Clayton R. Newell and Michael D. Krause (Washington: Centre of Military History US Army, 1994), 18-20. Schneider's operational art is characterized by "free distributed maneuver" in a "series of distributed battles leading to the dispersion of combat force in space and time." This is the arena of very large joint operations of war conducted simultaneously and sequentially throughout the entire depth of a theatre of operations and all united by common strategic purpose. The scope of this level and size of operations has been beyond the capacity of the Canadian Army, whose place in war has always been focused at the conduct of battles and engagements (at the tactical level). While some Canadian battles have had operational level relevance (eg. Vimy Ridge or Rimini), this in itself does not infer operational level command or experience. 19 DLCD 3189-1, *System Study 1996-2005 The Corps Model, Synopsis of Operational Concepts*, 31 July 1989.

²⁰ British influence came from: *Design for Military Operations - The British Military Doctrine* (Army Code 71451, 1989), and British Army Doctrine Publication Volume One - *Operations*. US influences came primarily from United States Marine Corps Fleet Marine File Manual 1 (FMFM1) *Warfighting* (1989). These two publications formed the basis for Canadian interpretations of doctrine. The US Army's FM 100-5 *Operations* (1993) had less impact but was borrowed from. Again, the author can say this with certainty as one of the doctrine authors for CFP 300 and 300-1 in 1995.

²¹ General Curtis E. LeMay, quoted in Air Force Manual 1-1 (AFM 1-1), *Basic Aerospace Doctrine of the United States Air Force* (Washington: US Air Force, 1984), introduction.

²² The development of Active Defense and AirLand Battle are covered in; John L. Romjue, From Active Defense to Airland Battle: The Development of the Army Doctrine 1973-1982 (Fort Monroe, VA: The US Army Training and Doctrine Command Historical Monograph Series, 1984); or, Paul H. Herbert Deciding What Has to be Done: General William E. Depuy and the 1976 edition of FM 100-5, Operations (Leavenworth Papers No. 16) (Fort Leavenworth, KS: Combat Studies Institute, 1988). For information regarding the impact of Active Defense as a catalyst for institutional change see: Edward Elme Blankenhagen, Organizational Learning in the Development of Doctrine in the US Army, 1976-1986: A Historical Case Study (Ann Arbor: UMI Dissertation Services, 1995).

²³ William S. Lind "Some Doctrinal Questions for the United States Army" Military Review Vol. LVII, No. 3, March 1977 (Fort Leavenworth, KS: US Army Command and General Staff College, 1977), 54.

²⁴ Robert Taft, Jr. in cooperation with Senator Gary Hart White Paper on Defense: 1978 Edition: A Modern Military Strategy for the United States (Washington: 15 May 1978).

²⁵ Lind, "Some Doctrinal Questions", 58. Lind argues that attrition doctrine is based upon firepower and dedicated to destruction, with the aim of manoeuvre being the destruction of an enemy. His ideas on 'maneuver warfare' are clearly associated with *blitzkrieg* - offensive operations designed to induce shock leading to an enemy's collapse. This differs somewhat from his later writing on 'maneuver warfare'

wherein he associates his theory with John Boyd's famous OODA loops and is not so reliant upon large scale ground manoeuvre; see Footnote 34 below in reference to John Boyd.

²⁶ Quote from *Ibid.*, 57. Lind cited only three authors in substantiation for his theory, J.F.C. Fuller, B. H. Liddell Hart and Heinz Guderian. The centrepiece of the theory is *blitzkrieg* reincarnated.

²⁷ See Edward N. Luttwak, "The American Style of Warfare and the Military Balance" *Survival* Vol XXI, Number 2, March/April 1979, 57; and "The Operational Level of War" *International Security* Vol. 5, No. 3, Winter 1980/81, 61; also *Strategy: The Logic of War and Peace* (Cambridge: Harvard University Press, 1987). Luttwak was heavily influenced by German military history, referring in his early works to *blitzkrieg* as the example of *relational-maneuver* (as opposed to attrition) warfare. He was also an advocate of German "elastic defense" theory as a model for NATO. He took this particular argument into his writing of history, using elastic defense as an example of an optimal defense strategy utilized by the Romans, see his *The Grand Strategy of the Roman Empire: From the First century A.D. to the Third* (Baltimore: Johns Hopkins University Press, 1976).

²⁸ Luttwak, "The American Style", 64-67.

²⁹ Romjue, *From Active Defense to Airland Battle*, 58.

³⁰ Manoeuvre warfare was "a favorite shibboleth of the Defense Reform Caucus" (James J. Schneider "The legacy of V.K. Triandafillov" the Introduction to *The Nature of the Operations of Modern Armies* by V.K. Triandafillov, ed. by Jacob W. Kipp (Portland: Frank Cass, 1994)), xxvi.). For information on the Reform Caucus see James W. Reed, "Congress and the Politics of Defense Reform" in *The Defense Reform Debate: Issues and Analysis* ed. by Asa A. Clark, Peter W. Chiarelli, Jeffrey S. McKittrick, and James W. Reed (Baltimore: Johns Hopkins University Press, 1984), 230. Lind's involvement in the debate was substantial and perhaps self-serving, his arguments are summarized in Sen. Gary Hart and William S. Lind, *America Can Win* (Bethesda, Md.: Alder and Alder Publishing, 1987).

³¹ Romju, *From Active Defense to Airland Battle*, 58. See also Huba Wass de Czege "Army Doctrinal Reform" in *The Defense Reform Debate: Issues and Analysis*, 101-120. Wass de Czege was the Lieutenant Colonel responsible for the drafting of FM 100-5, *Operations* in 1982 encapsulating AirLand Battle, aided by Lieutenant Colonels Holder and Henriques.

³² The acceptance by the Army of the manoeuvre-attrition dichotomy as a tool to understanding is unquestionable. General Donn A. Starry used it in his forward to Richard Simpkin's *Race to the Swift: Thoughts on Twenty-First Century Warfare* (London: Brassey's Defense Publishers: 1985). The exclusion of the dichotomy and the term 'maneuver warfare' from written doctrine is more telling. That the subject was debated within Army circles is evident in Richard M. Swain's *Selected Papers of General William E. Depuy* (Fort Leavenworth, KS: Combat Studies Institute, 1994); see particularly the papers on pages 315 and 339 arguing the need for a balancing of emphasis between firepower-manoeuve and centralized-decentralized command practices.

³³ James J. Schneider "The legacy of V.K. Triandafillov" the Introduction to Triandafillov, *The Nature of the Operations of Modern Armies*, xxv-xxvii.

³⁴ William S. Lind *Maneuver Warfare Handbook* (Boulder: Westview Press, 1985). Lind's maneuver warfare of 1985 differs from that of his 1977 articles for its heavy reliance upon Air Force Colonel John Boyd's theory of warfare based upon time-competitive 'decision-action' cycles, the premise of which is that an army that could constantly gather information, and make and execute decisions faster than an opponent, would inevitably win. Boyd wrote very little in treatise form: his theory was first and most comprehensively articulated in a 1977 briefing entitled "Patterns of Conflict", amended in 1986. The author has reviewed these briefings, which remain unpublished. See also the monograph by Major Robert B. Polk "A Critique of the Boyd Theory - Is It Relevant to the Army?" (Fort Leavenworth: School of Advanced Military Studies, 99-00).

³⁵ William Lind is dissatisfied with the lack of progress made in the USMC to institutionalize his theory of manoeuvre warfare. He blames institutional intransigence and not the shallowness of his own concept; see W.S. Lind "What Great Victory? What Revolution?" in the USMC's *Tactical Notebook* (May 1993). The most compelling internal condemnation of USMC doctrine is found in an unpublished monograph: Major Craig A. Tucker "False Prophets: The Myth of Maneuver Warfare and the Inadequacies of FMFM-1 Warfighting" (Fort Leavenworth: School of Advanced Military Studies, 1994). Indication of doctrinal discontent can be found in examination of *Marine Corps Gazette* articles relating to 'maneuver warfare' from the period 1986-1996; see for instance Kenneth F. MacKenzie "They Shoot Synchronizers Don't They?" *Marine Corps Gazette* 78 (August 1994): 30-33, and John S. Schmitt "Out of Sync With Maneuver Warfare" *Marine Corps Gazette* 78 (August 1994), 16-22. The greatest criticisms centre upon the neglect afforded to the use of firepower in the written doctrine; firepower being viewed as the antithesis of maneuver and the instrument of attrition. Traditional USMC reliance upon firepower and the proud heritage of Marine artillery and naval and air fire support add fuel to the discontent about this neglect. The other aspect of this problem is manifest in the fact that FMFM-1 did not serve the USMC adequately in efforts to organize and equip the Corps – there being no clear TTP for manoeuvre warfare upon which to base such Force management activities. The amended USMC doctrine – MDCP-1 – and the new operational concept of the Corps – Operational Maneuver From the Sea – addresses the deficiencies of Lind's manoeuvre theory, and all other Marine manuals add needed structure to the USMC idea of manoeuvre warfare.

³⁶ The Marine Corps acknowledges that it is equipped and trained to win battles – not wars. They in fact have no history of operational art or tradition of conducting campaigns. In joint theatre operations they provide valuable assets in campaign planning, but in themselves are not a decisive force. Their role in OPERATION DESERT STORM is illustrative.

³⁷ Brigadier Richard E. Simpkin retired from the British Army in 1971, after serving thirty years in the Royal Tank Regiment and Royal Armoured Corps. He was a technical specialist and multi-lingual translator. Upon retirement he created a commercial translations company and lectured and wrote extensively on future technologies and warfare. His political and self interests in forecasting are not obvious in his written works. See Simpkin, Race to the Swift.

³⁸ Quote from Brian Holden Reid Military Power: Land Warfare in Theory and Practice (Portland: Frank Cass, 1997), 193. Reid claims that Simpkin's work has given manoeuvre theory a reputation of impenetrable obscurity and is less compelling to the military mind than is Lind's Maneuver Warfare Handbook, which has had more currency at the Army Staff College at Camberley. It would be incorrect to claim that Simpkin's theories are the exclusive basis for the *Design for Military Operations: British Military Doctrine* (London: Army Code No. 71451, 1989); J.F.C. Fuller also has a place in this seminal army publication, as does Frank Kitson with regard to explaining operations other than war.

³⁹ A perfect example of this is to be found recently in articles by Brigadier J.B.A. Bailey MBE "Deep Battle 1914-1941: The Birth of the Modern Style of Warfare" and "The Century of Firepower" in *The British Army Review*, Number 120. Bailey refutes the very basis of manoeuvre theory without directly confronting it as theory. His base argument is that manoeuvre has received much too dominant an emphasis in modern war, and that firepower, vis-à-vis Deep Battle, is more relevant and decisive. In this he gravitates to the other pole of the attrition-manoeuve dichotomy.

⁴⁰ The first article in Canadian journals was Maj C.S. Oliviero's "Manoeuvre Warfare: Smaller can be Better" *Canadian Defence Quarterly* Vol 18, No. 2 (Autumn 1988), 67-72. One of the most indepth articles is Captain I. Hope's "Changing a Military Culture: Maneuvre Warfare and a Canadian Operational Doctrine" in *Quarterly Review* Vol 5 No. ½ (Spring 1995), 1-7.

⁴¹ This was a direct experience by the author as a primary writer for CFP 300 and CFP 300-1.

⁴² 'Manoeuvre warfare' is mentioned only once in these two publications, on page 2-3 of CFP 300-1. The authors (Majors Ian Hope, PPCLI, and Brad Bergstram, Engr) deliberately chose to avoid the confusion

surrounding this term. The editors concurred. The term, however, was in use in briefings, lectures and articles throughout the army. It was only in the preparation of subsequent and subordinate doctrine publications, under different authorship, that the term 'manoeuvre warfare' was used and defined.

⁴³ See for instance the evident controversy in articles in *The Army Doctrine and Training Bulletin*; LCol C. Oliviero's "Trust, Manoeuvre Warfare, Mission Command and Canada's Army" with Col W. Semianiw's "The Battle Group in the Advance and Maneuver Warfare" in Vol 1, No. 1 (August 1998), 24-28, and 51-56 respectively. See also Col Semianiw's "Manoeuvre Warfare and Leading from the Front", LCol. Roman J. Jarymowycz, "Doctrine and Canada's Army: seduction by Foreign Dogma: Coming to Terms with Who We Are" and "Firepower: a Primer for the New Manual" in Vol. 2, No. 3 (August 1999) as illustrative of how disparate are the views regarding manoeuvre warfare.

⁴⁴ *The Land Force Strategic Direction and Guidance* (LFSDG) Part 1, Chapter 2, page 8/18. Manoeuvre warfare is in fact mentioned only once in Canadian Forces Publication (CFP) 300-1 Land Force Volume 1 – *Conduct of Land Operations – Operational Level Doctrine for the Canadian Army* (Ottawa: National Defence Publication, 1996): in the footnote on page 2-3. The authors deliberately chose to dismiss the words 'manoeuver warfare' because the doctrine being written - while 'manoeuvrist' in inclination - deviated from that espoused by William S. Lind, Robert Leonhard and Richard Simpkin. The authors of CFP 300-2, Land Force Volume 2 – *Land Force Tactical Doctrine*, did not share the same view and liberally used the term and definitions of manoeuvre warfare favoured by these authors; see page 1-8 for the description of manoeuvre warfare referred to in the LFSDG.

⁴⁵ CFP 300-2, Land Force Volume 2 – *Land Force Tactical Doctrine*, 1-8.

⁴⁶ The definition and role of doctrine has been a contentious issue in most armies throughout modern history. The broad purpose view of doctrine has become prevalent in three armies studied here – the German army 1860-1945, the Soviet Army 1920-1989, and the US Army 1976-1999. The perspective of doctrine prescribed in this thesis draws from the commonality between the use of doctrine in these three armies. There is consistency in the German's doctrinal approach between 1860 and 1945 because of the institutional place of doctrine – expressed as an operational concept (*kriegsführung*) – within the General Staff system. This system was highly integrated, with the operational concept providing the input into national mobilization planning, and the historical section of the High Staff providing feedback for the system based upon empirical lessons learned. Integration of technologies was accommodated within the system. The mechanisms of the staff system also reviewed the organizational components critical to realizing the operational concept. For details on the organization and function of the German system see Major Theodore Schwan, *Report on the Organization of the German Army* (Office of the the Assistant Adjutant General US Army, Washington: Government Printing Office, 1894); Herbert Rosinski, *The German Army* (New York: Praeger 1966); Mathew Cooper, *The German Army 1933-1945* (London: Scarborough House, 1978); Denis Showalter, *Railroads and Rifles: Soldiers Technology and the Unification of Germany* (Hamden: Archon Press, 1986); Martin Samuels, *Command or Control* (London: Frank Cass, 1995); James S. Corum, *The Roots of Blitzkrieg* (Lawrence: University Press of Kansas, 1992); and Walter Goerlitz, *History of the German General Staff 1657-1945* (New York: Praeger, 1962). The Soviet perspective on doctrine is similar in its integrative nature, clearly presented in the conception of the "Unified Military Doctrine" of M.V. Frunze: "...A unified military doctrine is the teachings adopted in the army of a given state and establishing the nature of the organizational development of the of the nation's armed forces, the methods of troop combat training and their leadership on the basis of the views prevailing in the state concerning the nature of the military tasks confronting them and the methods of resolving these...and determined by the development level of the nation's productive forces." Quoted in M.A. Gareev, *M.V. Frunze, Military Theorist* (Washington: Pergamon-Brassey's, 1988), 103. This perspective on doctrine lay at the essence of the great Frunze-Trostky doctrine debates of the 1920's, from which emerged the relatively coherent and systematic approach to combat development that characterized Soviet military activity 1920-1937; see *The Evolution of Soviet Operational Art, 1927-1991: The Documentary Basis* translated by Harold S. Orenstein (London: Frank Cass, 1995). The similarity to the US Army's "systems approach" to doctrine, emphasizing doctrine as the "engine of change" will be covered later in Section IV.

⁴⁷ Sun Tzu, Art of War translated by Ralph D. Sawyer (Boulder: Westview Press), 167.

⁴⁸ Vegetius drew his material from ancient authorities- Cato, Celus, Frontinus and Paternus - making his a compilation of lost military doctrines from earlier times, see N.P. Milner, Vegetius: Epitome of Military Science (Liverpool: Liverpool University Press, 1993), xiv – xxi. See also Delbruck, History of the Art of War, Volume II: The Barbarian Invasions translated by Walter J. Renfro, Jr. (Lincoln: University of Nebraska Press, 1975), 202-205; and Thomas R. Phillips, ed. Roots of Strategy: the 5 Greatest Military Classics of All Time (Harrisburg: StackPole Books, 1985), 67.

⁴⁹ Machiavelli follows Vegetius' documentary organization: Vegetius' expositions on military service, training, drill and exercises are in his Book I, Machiavelli's same subjects are in the same order in his second book. Vegetius' Book III on tactics and generalship equates to Machiavelli's Book IV and Book V.

⁵⁰ See Machiavelli Book II, The Art of War in the Neal Wood edition, 76-80. *Virtu* is characterized by boldness, bravery, decisiveness, and resolution – the power to sustain a course of action to the end. It is both an individual and collective quality. See also Wood commentaries, liv-lvi.

⁵¹ Barker, The Military Intellectual, 5 and 58. Montecuccoli was an Italian-born Austrian Imperial General and the chief founder of modern Austrian Army. He developed a theory of military organization based upon a 48,000 strong combined arms standing army, well-equipped and trained for war. He devised tactics for both horse and foot, and operational method that sought always to seize the initiative. He is also accredited with articulating strategy for limited operations and wars of attrition in manner practiced in the 18th century; see Barker, 60-61. But his was not strictly a primitive scientific approach, his doctrine had a moral component evident in his examination of the qualities of leadership in war: see Makers of Modern Strategy, 62; and Barker, 64-71. Montecuccoli's morality is influenced by Machiavelli's *virtu* and Lipsius' *constantia*. Montecuccoli's emphasis upon professional military preparations is also examined in Paret, ed. Makers of Modern Strategy, 61.

⁵² McNeill, The Pursuit of Power, 134-143.

⁵³ The search for immutable laws in war became evident in the doctrinal texts. Marshal Maurice de Saxe declared in *Mes Reveries* that careful application of tactical manoeuvres and attention to logistics could 'guarantee' success. Technical writings appeared on military craft; the most noticeable by Sebastien Le Prestre de Vauban, whose works on fortification endured well into the 19th century (Engineering schools were established at Woolwich in 1721, *Ecole Militaire* in 1751, and in the Potsdam Academy of Engineering in 1768). Science and technology were becoming pervasive themes in military education in the 18th century, and Vauban had a most influential role in this; see Paret, ed. Makers of Modern Strategy, 72-73. The first comprehensive doctrine of the modern times was probably Frederick the Great's *Instructions for His Generals*. While a prescription of standard tactics and procedures, Frederick also considers the moral aspects of doctrine particular to the strict discipline of the Prussian Army. But more than this, *Instructions* is unique in its expression of specific concepts of operations for future campaigns for the Prussian Army. T. R. Phillips, ed. Roots of Strategy: The Five Greatest Military Classics of All Time (Harrisburg: Stackpole, 1985) see Saxe "My Reveries Upon the Art of War", 177; and "The Instruction of Frederick the Great For his Generals, 1747", 301. Frederick's other works include: *Principes generaux de la guerre*, *Testament militaire*, *Elements de castrametrie et de tactique* all of which by name alone describe the systematic approach being adopted at the time to all things military. In his *Instructions* he gave his subordinates in one volume doctrine that is coherent with his stated strategic purpose. His aim was clear: "to turn the army into an instrument of a single mind and will." Paret, ed. Makers of Modern Strategy, 99.

⁵⁴ Hans Delbruck claims the French revolution not only produced a new "character of the army, but also tactics, and finally strategy, and it brought on a new period in the history of the art of war." Delbruck, History of the Art of War, Volume IV, 390. But such new tactics and strategy did not rise spontaneously from the revolution: The emphasis on mobility and the divisional organization itself – things which were decisive for Napoleon – were borrowed from Guibert in his *Essai general de tactique* (1770) and his

Defense du systeme de guerre (1779) Ibid., 407; see also R.R. Palmer, "Frederick the Great, Guibert, Bulow: From Dynastic to National War" in Paret, ed. Makers of Modern Strategy, 91. Gribeauval gave Napoleon improved artillery. Under Napoleon the prescripts of older doctrinal texts were combined into a new and powerful system of warfare, that was not however reliant upon one written treatise, and were therefore susceptible to interpretations after Napoleon's defeat.

⁵⁵ James J. Schneider, The Structure of Strategic Revolution: Total War and the Roots of Soviet Warfare State (Novato: Presidio Press, 1994), 32-53. Also by James J. Schneider, "Theoretical implications of Operational Art" in On Operational Art ed. by Clayton R. Newell and Michael D. Krause (Washington: Center of Military History US Army, 1994), 18, and; Vulcan's Anvil Theoretical Paper No. 4 (Leavenworth, School of Advanced Military Studies, 1991), 30-32.

⁵⁶ Shimon Naveh In Pursuit of Military Excellence: The Evolution of Operational Theory (Portland: Frank Cass, 1997).

⁵⁷ Ibid., 6.

⁵⁸ Bertalanffy, General System Theory, xx.

⁵⁹ Dietrich Dorner, The Logic of Failure: Why Things Go Wrong and What We Can Do to Make Them Right (New York: Metropolitan Books, 1996), 38.

⁶⁰ Peter M. Senge, The Fifth Discipline: The Art & Practice of the Learning Organization (New York: Currency Doubleday, 1990).

⁶¹ Naveh, In Pursuit, 7.

⁶² Ibid., 7.

⁶³ Ibid., 14.

⁶⁴ James J. Corum, The Roots of Blitzkrieg: Hans von Seeckt and German Military Reform (Lawrence: University Press of Kansas, 1992), 137.

⁶⁵ Ibid., 202-203.

⁶⁶ Mathew Cooper, The German Army 1933-1945 (London: Scarborough House, 1978), 115-117.

⁶⁷ Outside of the General Staff (disguised as the *Truppenamt*) officers did not engage in strategic speculation or politics – their professional focus was on tactical level proficiency. But strategic thinking and policy making was going on in the training and in planning activity of the *Truppenamt*. The traditional need to avoid two front wars led *Truppenamt* to consider the strategy to defeat Poland and France in operations of manoeuvre. See Corum, Roots, 87 and 95.

⁶⁸ Jeduha L. Wallach, The Dogma of the Battle of Annihilation: The Theories of Clausewitz and Schlieffen and Their Impact on the German Conduct of Two World Wars (Westport: Greenwood Press, 1986), 210-211. Von Seeckt deviated from the traditional reliance upon mass armies: he saw two roles for the German army, a small elite strike force and a basis for the expanded army. See Corum, Roots, 52, 55, and 69.

⁶⁹ Corum, Roots, 49.

⁷⁰ Ibid., 38.

⁷¹ Ibid., 84 and 87.

⁷² Ibid., 54; and Chapters 5 and 8.

⁷³ Ibid., 122-125. Guderian has criticized heavily the German Army leadership for their apparent intransigence regarding the development of armour. In truth von Seeckt supported this development, Volckheim set up tank training programme in 1924 and von Fritsch, von Blomberg and *Truppennamt* all wanted independent tank organizations. The German Army of this period was a 'learning organization' and was committed to discovering the best utility of the tank. It was not however prepared to throw out the tradition of 'annihilation' to satisfy the armour school.

⁷⁴ See Martin Van Crevald, Fighting Power: German and US Army Performance, 1939-1945 (Westport: Greenwood Press, 1982). Van Crevald demonstrates statistically the continued effectiveness of the German army throughout WWII. He suggests that their military system was crude in comparison to US standards, but effective. His criticism of the highly structured US Army system does not give enough credit to the fact that this structure eventually did win.

⁷⁵ Department of the Army, Field Manual (FM) 100-5, *Operations* (Washington: 1976).

⁷⁶ Edward Elme Blankenhagen, Organizational Learning in the Development of Doctrine in the US Army, 1976-1986: A Historical Case Study (Ann Arbor: UMI Dissertation Services, 1995).

⁷⁷ US Army Field Manual (FM) 100-5, *Operations* (Washington: Department of the Army, 1982), and US Army Field Manual (FM) 100-5, *Operations* (Washington: Department of the Army, 1986).

⁷⁸ Most notably the Apache helicopter, MLRS, the M1 and M2 and JSTARS.

⁷⁹ A succinct interpretation of the systems approach, and in particular the 'interpretation' (feedback) systems (including NTC and CALL) instituted under the Starry reforms can be found in Blankenhagen, Organizational Learning, 102-112. See also Ann W. Chapman, The Army's Training Revolution 1973-1990: An Overview (Fort Monroe: US Army Training and doctrine Command, 1991).

⁸⁰ See Chapman, Training Revolution, for background to this contention. The argument is presented in Harry Summers, On Strategy II: A Critical Analysis of the Gulf War (New York: Dell Publishing, 1992), Chapter 8.

⁸¹ Douglas A. MacGregor, Breaking the Phalanx: A New Design for Landpower in the 21st Century (Westport: Praeger, 1997), 144.

⁸² Quoted in Daniel P. Bolger "Maneuver Warfare Reconsidered" in Maneuver Warfare: An Anthology ed. by Richard D. Hooker, Jr. (Novato: Presidio, 1993), 19. Bolger's article is one of the best criticisms to be found of manoeuvre warfare as a basis for doctrine. His witty sarcasm aside, the points he raises concerning the flaws of 'maoeuvre theory' have not been rebutted.

⁸³ See Daniel J. Hughes, "The Abuses of German Military History" *Military Review*, December 1986.

⁸⁴ See Lind, Handbook, 18 and 73-80. Lind relies upon three main sources in his explanations: B.H. Liddell Hart's "The man-in-the-Dark" Theory of Infantry Tactics and the 'Expanding Torrent System of Attack' in Journal of the Royal United Services Institute February, 1921, 13; Timothy Lupfer's influential work The Dynamics of Doctrine: The Changes in German Tactical Doctrine During the First World War Leavenworth Paper No.4 (Fort Leavenworth, KS: US Army Command and General Staff College, 1981); and Department of the Army Pamphlet 20-269 Small Unit Operations During the German Campaign in Russia (Washington: US Army, 1953).

⁸⁵ This monograph distinguishes clearly between manoeuvre warfare and command philosophies that seek decentralization. They are separate concepts and not necessarily dependent. Decentralized command philosophies have always had relevance and currency in war, provided that there is cognitive understanding of the absolute requirement in some operations to maintain tight tactical control in order to achieve

synchronization. Again – like manoeuvre and attrition – one must see the dichotomy for what it is – a conceptual construct – and not be a slave to one part or another. For a superb example of the institutionalization of decentralized command practices in history, and outside of the manoeuvre warfare context see J.F.C. Fuller, Sir John Moore's System of Training (London: Hutchison & Co., 1924). The light infantry tradition of the British Army 1745-1815 is illustrative. So too is the allowance for initiative within the Canadian Corps 1916-1918, see Bill Rawling, Surviving Trench Warfare: Technology and the Canadian Corps, 1914-1918 (Toronto: University of Toronto Press, 1992). The emphasis placed upon decentralized command as essential to manoeuvre warfare is illustrative of the heavy German influence. The WWI innovations of the German Army institutionalized decentralization which was retained in *Army Regulation 487* and *Truppenfuhrung*. However, decentralization of command function is, with digitization, no longer essential to manoeuvre warfare; see Robert Leonhard "Maneuver Warfare and the US Army" in Maneuver Warfare, and Anthology ed. by Richard D. Hooker (Novato: Presidio, 1993), 43-52; and Robert Leonhard The Principles of War for the Information Age (Novato: Presidio, 1998), 179-180.

⁸⁶ See Hart and Lind, America Can Win, 33-34.

⁸⁷ A well-articulated criticism of the historical foundations of manoeuvre warfare theory is presented in Craig Tucker's "False Prophets", 14-27.

⁸⁸ Hans Delbruck, History of the Art of War translated by Walter J. Renfro, Jr. (Lincoln: University of Nebraska Press, 1975).

⁸⁹ Delbruck, History, Vol I, 135-139; see also Gordan A. Craig, "Delbruck: The Military Historian" in Makers of Modern Strategy: from Machiavelli to the Nuclear Age ed. by Peter Paret (Princeton: Princeton University Press, 1986), 341. Also see: Arden Bucholtz, Hans Delbruck and the German Military Establishment (Iowa City: University of Iowa Press, 1985). Delbruck's interpretation of a strategic duality is founded in Carl von Clausewitz's limited and unlimited duality of war, see his note of 10 July 1827, explaining this duality, prevalent in key parts of his masterpiece, On War ed. and translated by Michael Howard and Peter Paret (Princeton: Princeton University Press, 1984), 69, and Book Eight, Chapters Five, Six and Seven.

⁹⁰ One of the best explanations of the Delbruckian dichotomy, framed within a discussion of levels of command, war and peace, and guerrilla versus conventional operations is found in Mao Tse-Tung Selected Military Writings of Mao Tse-Tung compiled by the Combat Studies Institute (Fort Leavenworth: US Army Command and General Staff College, 1991), 142, 187, 210, 229-257. The utility of the Delbruckian dichotomy is evident here.

⁹¹ The extent of tradition in German warfare is covered in Mathew Cooper, The German Army 1933-1945 (London: Scarborough House, 1978), 133-138. The influence of Schlieffen and his predilection for annihilation is presented in Jeduha L. Wallach, The Dogma of the Battle of Annihilation: The Theories of Clausewitz and Schlieffen and Their Impact on the German Conduct of Two World Wars (Westport: Greenwood Press, 1986), 210-211. In the 1920's von Seeckt did not deviate from the tradition of annihilation, but he was innovative in the sense that he sought annihilation by a professional army with superior technologies, and not by a mass conscript force, see James J. Corum The Roots of Blitzkrieg: Hans von Seeckt and German Military Reform (Lawrence: University Press of Kansas, 1992), 51-54.

⁹² The potential disaster associated with having to fight wars simultaneously on two fronts is a legacy from the era of Frederick the Great and has defined the German problem of national survival. Robert M. Citino in his book The Evolution of Blitzkrieg Tactics: Germany Defends Itself Against Poland 1918-1933 (Westport: Greenwood Press, 1987) argues that The Polish threat was a catalyst for developing Blitzkrieg to solve the strategic dilemma facing Germany. James Corum considers this too simplistic stating that The French threat was also considered (see Corum, Roots, xi and 197), however Corum's argument does not detract from Citino's observation that the geo-strategic situation and war planning had a tremendous impact on the development of German Army capabilities. Barry Posen in his The Sources of Military Doctrine: France Britain, and Germany Between the World Wars (Ithaca: Cornell University Press, 1984)

argues that the German Army was led to an offensive doctrine (of annihilation) because of the predominant influence of 'organizational theory', and not because of perceived geo-strategic need. Posen's arguments are addressed satisfactorily by Corum (Roots, 66).

⁹³ Cooper, The German Army, 137-138. This is explained in the German Field Service Regulations *Truppenfuhrung* (Troop Leading) 1933, Articles 314-329, translated and reproduced by the US Army (LaCrosse, Wisconsin: Digital Production, date unknown).

⁹⁴ *Truppenfuhrung*, articles 355-371 indicate the infantry-focus and the limited extent to which the Germans in 1933 were reliant upon the tank as their main offensive weapon.

⁹⁵ Corum, Roots, Chapter 6, 122-168. The tension between the traditional and the armoured school is also covered in Shimon Naveh, In Pursuit of Military Excellence: the Evolution of Operational Theory (Portland: Frank Cass, 1997), Chapter 4, 105-163.

⁹⁶ Naveh, Pursuit, 124; see also John A. English, A Perspective on Infantry (New York: Praeger, 1981), 95-96.

⁹⁷ This is the author's interpretation based upon the premise that the blitzkrieg form of maneuver warfare (the form advocated by its originators) seeks rapid decision by a 'complete' capitulation of the enemy. The role of battle and force destruction in this is secondary. Whether the enemy fights or not, whether he surrenders because of a paralyzed command structure, because of a reversal of political and military will, because of a perceived threat to civilians, because of casualties, or because of a combination of all of these things, is immaterial provided that he surrenders rapidly and decisively to the will of the attacker. An alternative point of view has arisen that argues that rapid and decisive defeat of an enemy without destruction of his forces is indeed a third form of strategy different from that of annihilation (in battle) or exhaustion: see James J. Schneider "A New Form of Warfare" in *Military Review* Vol LXXX, January-February 2000, No. 1 (Fort Leavenworth: US Army Command and General Staff College, 2000), 56. Naveh, Pursuit, 124; see also John A. English, A Perspective on Infantry (New York: Praeger, 1981), 95-96.

⁹⁸ Lind, Maneuver Warfare Handbook, 73.

⁹⁹ Naveh, In Pursuit, 125. Manstein's plan for France May 1940 was for the concentration of armour forces to induce shock as a means to their division, encirclement and the annihilation (by destruction) of key fighting formations; shock was not an end in itself. It was only when Guderian achieved unforeseen success and saw opportunity that the tension between these two concepts emerged.

¹⁰⁰ Naveh, In Pursuit, 150; Naveh characterizes the German enslavement to a simple tactical formula (penetration x mechanization x encirclement = destruction) as "beyond the limits of professional and human logic, attempting to satisfy the frenzied fluctuations of an incoherent strategy."

¹⁰¹ J.F.C. Fuller, Armament and History (New York: Da Capo Press, 1998), 148.

¹⁰² Naveh, In Pursuit, 140-144.

¹⁰³ Tucker, "False Prophets", 12.

¹⁰⁴ *Ibid.* 143-144.

¹⁰⁵ This assertion will be contested by manoeuvrists. The early articulation of manoeuvre warfare introduced the concept of the operational level of war as an intermediary level between tactics and strategy. However, being slave to the attrition-manoeuve dichotomy these writers associated attrition as solely a tactical level focus and manoeuvre with a liberating operational level focus. This of course ruined any

chance of finding synthesis which the operational level offers. See Edward N. Luttwak, "The Operational Level of War" *International Security* Vol. 5, No. 3, Winter 1980/81, 61.

¹⁰⁶ Shimon Naveh, *In Pursuit*, 15.

¹⁰⁷ James J. Schneider's "Theoretical implications of Operational Art" in *On Operational Art* ed. by Clayton R. Newell and Michael D. Krause (Washington: Centre of Military History US Army, 1994), 18-20.

¹⁰⁸ Naveh, *In Pursuit*, 1.

¹⁰⁹ Svechin, *Strategy*, 68. Svechin's work was first published in 1927. The importance of the operational level linkage between politics, strategy and tactics has not always been so clear. The first modern understanding of this critical linkage was demonstrated during the later half of the US Civil War (see James Schneider "Theoretical Implications" 18-19), but in the wake of that war the US reverted to tactical level thinking. At the same time Helmut Graf von Moltke was beginning to understand the relationship between war planning and geo-strategic realities: but he refused to codify an operational level doctrine and would not accept the disciplining of operations by politics once hostilities commenced. (See *Moltke On the Art of War: Selected Writings* ed. by Daniel J. Hughes (Novato: Presidio, 1993) In this regard he broke from Clausewitz. His legacy remained – to the misfortune of later Germans – tactically focused. See also Donald Cranz "Understanding Change: Sigismund von Schlichting and the Operational Level of War" a School of Advanced Military Studies Monograph (Fort Leavenworth: US Army Command and General Staff College, 1989) for an examination of the rise of operational understanding in the German Army of the late 19th century. I.S. Bloch's (also Jean de Bloch) monumental work of 1898 *The Future of War* (Fort Leavenworth: Combat Studies Institute Reprint) clearly demonstrates understanding of the linkage in his argument about the purpose of industrial age warfare as a political instrument. Unfortunately European Armies ignored Bloch while preparing their mobilization plans before 1914.

¹¹⁰ The place of attrition and manoeuvre within the strategies of annihilation and exhaustion is of some interest. Attrition is critical to both strategies – it is the means by which annihilation is achieved. Decisive battle is an attempt to utilize rapid attrition of the enemy's means to produce decision. This does not preclude manoeuvre, for it is manoeuvre that places forces in the best position for the decisive engagement. Leuctra, Cannae, and countless other decisive battles required manoeuvre to produce the attrition necessary for annihilation. Likewise attrition is necessary to strategy of exhaustion. Incremental attrition is sought through manoeuvre (to positions of advantage in relation to the enemy) and through engagement (to weaken physically and morally) an opponent. Here the effects of attrition are gradual. The European tradition of the pre-WWI era was upon strategies of annihilation, short decisive wars in the Franco-Prussian or Napoleonic image. But WWI broke the European mold. Strategies did not take into account the impact of the industrial revolution upon warfare. The inability of any side to gain decisive annihilation made each nation default to a costly war of exhaustion – unlike anything envisioned by Delbruck. Manoeuvre to decisive battle was foreclosed after the 'race to the sea', and annihilation denied. Manoeuvre in avoidance of decisive battle was likewise precluded. Attrition on an hereto unforeseen extended front was the only alternative. In the analysis of the Great War during the 1920's and 1930's most armies sought to avoid strategies of exhaustion by discovering means to re-instill mobility in war. The Soviets and the Germans both conducted profound analysis. The Soviet's was the most comprehensive, surpassing that of the Germans because it formalized the linkage of politics, strategy and tactics, producing the world's first 'unified doctrine'; see Svechin, *Strategy*, and Makhmut A. Gareev *M.V. Frunze Military Theorist* (London: Pergamon-Brassey's, 1988), 103. The complimentary, as opposed to contending, nature of attrition and manoeuvre in the Delbruckian duality of annihilation and exhaustion goes a long way in deflating the attrition-manoeuve dichotomy as sound basis for theory of war.

¹¹¹ Svechin believed that in war preparation a 'working hypothesis' regarding which strategy was absolutely essential. The geo-political situation must determine the likely threats, which in turn defines the national goals in relation to these threats, which then allowed the political and military leaders to agree upon the appropriate military strategy – one of annihilation or exhaustion. *Ibid.*, 97.

¹¹² V.K. Triandifilov, The Nature of the Operations of Modern Armies ed. by Jacob W. Kipp (Portland: Frank Cass, 1994).

¹¹³ Ibid., 159-179. In the preface to this work Dr. Jacob Kipp states that Triandifilov brought applied science to calculation of operations plans (page xvii). See also James J Schneider, The Structure of Strategic Revolution: Total War and the Roots of the Soviet Warfare State (Novato: Presidio Press, 1994), 188.

¹¹⁴ M. N. Tukhachevskiy, New Problems in Warfare reprint of three chapters of authors 1931 work by the Art of War Colloquium – US Army Carlisle Barracks, 1983 (Fort Leavenworth: School of Advanced Military Studies Reprint). Also see: Richard Simpkin, Deep Battle: The Brainchild of Marshal Tukhachevskii (London: Brassey's Defence Publications, 1987), and Schneider, The Structure, 218-222.

¹¹⁵ This is very much as Svechin had originally advocated in Strategy. Of course this was very much rationalized within the communist state ideology wherein total war and class struggle inherently linked, see Schneider, The Structure, 217-218.

¹¹⁶ Aleksandr A. Svechin, Strategy ed. by Kent D. Lee (Minneapolis: East View Publications, 1992), 70.

¹¹⁷ Mao Tse-Tung Selected Military Writings of Mao Tse-Tung compiled by the Combat Studies Institute (Fort Leavenworth: US Army Command and General Staff College, 1991), 142, 187, 210, 229-257.

¹¹⁸ Indeed this is exactly where Simpkin was headed in his Race to the Swift and Deep Battle, whereas American Reform Caucus manoeuvrists remained transfixed by *blitzkrieg*.

¹¹⁹ Quoted from a work by Tukhachevskii (Preface to Fuller's Reformation of War), found in Svechin, Strategy, in the preface by Dr. Jacob Kipp, page 50.

¹²⁰ See B.H. Liddell Hart, Strategy (New York: Henry Holt & company, 1991). Compared with Delbruck's interpretation of strategy in history, and Svechin's articulation of the need for political, economic, diplomatic and military linkage in strategy, Liddell Hart's work is exceedingly simple and narrow of focus. His advocacy of 'the indirect approach' is overstated to the point of confusion. Fuller suffered somewhat similar narrowness in his advocacy of a tank only decisive manoeuvre force, see his Armored Warfare: Lectures on F.S.R. III (Operations Between mechanized Forces (Harrisburg: The Military Services Publishing Company, 1955).

¹²¹ Brian Holden Reid Military Power: Land Warfare in Theory and Practice (Portland: Frank Cass, 1997), 194-195.

¹²² LCol. Roman J. Jarymowycz, "Doctrine and Canada's Army: seduction by Foreign Dogma: Coming to Terms with Who We Are" in The Army Doctrine and Training Bulletin Vol. 2, No. 3, August 1999 (Kingston: Land Force doctrine and Training system, 1999), 48. The extent to which manoeuvre warfare has led to doctrinal confusion is evident in the heated arguments presented in this forum.

¹²³ The Land Force Strategic Direction and Guidance (LFSDG) Part 1, Chapter 1, page 9/9, and Chapter 2, pages 7-9/18.

¹²⁴ Ibid., Part 1, Chapter 2, page 7/18.

¹²⁵ An example is in the Canadian Army's own doctrine publications; see Col Walter Semianiw's "The Battle Group in the Advance and Maneuver Warfare" The Army Doctrine and Training Bulletin Vol 1, No 1, August 1998.

¹²⁶ This is particularly true if one envisions manoeuvre warfare in terms of M. N. Tukhachevsky's Deep Battle, see his New Problems in Warfare reprint of three chapters of authors 1931 work by the Art of War Colloquium – US Army Carlisle Barracks, 1983 (Fort Leavenworth: School of Advanced Military Studies Reprint). Also see: Richard Simpkin, Deep Battle: The Brainchild of Marshal Tukhachevskii (London: Brassey's Defence Publications, 1987).

¹²⁷ *The Land Force Strategic Direction and Guidance* (LFSDG) Part 1, Chapter 2, page 8/18. Here the statement is made that there is consideration of five new combat processes – shooting, sensing, shielding, commanding and supporting. This of course is not coherent with manoeuvre warfare, demonstrating the limited utility of it as doctrine or theory, and the degree to which new theories can and will pull apart any chance of coherency of doctrine within the current LFMP.

¹²⁸ For a convincing analysis of Canadian military failure to appreciate higher military concepts – and the fatal results of this – see John A. English, Failure in High Command: The Canadian Army in the Normandy Campaign (Ottawa: The Golden Dog Press, 1995).

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